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The Manitoba Health Plan

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ON January 10, 1945, the Honorable Ivan Schultz, Minister of Health and Public Welfare in the Manitoba Government, announced over the radio The Manitoba Health Plan, opening his remarks with that well known quotation from Juvenal "Life is not to be alive, but to be well." The Minister went on to say "Each patient who is ill is an individual, but he is also a member of a community, and in treating such patient the physician is not only treating an individual but a member of a community. For this reason, health and disease are no longer matters of private concern only. That is why every civilized state in the world has taken up the fight for health. There still remain two main problems in the field of health which must be solved: First, how effectively to prevent preventable diseases; Second, how to make modern medical skill and services available to all our people."

Keeping these two problems in mind in preparing our Plan, four objectives had to be given consideration. These were:

1. The service provided must take care of the most urgent needs of our people.
2. The provision of the services should be in such a manner that the required technical personnel will have working conditions conducive to a high quality of service.
3. The services provided should have a reasonable chance of being maintained despite any change in the economy of the Province.
4. The services should be so planned as readily to fit into any plan of health insurance which may be inaugurated at the federal level of government.

In this Central Province of Canada the most urgent need has always been, and still is, better health service for our rural people. The Manitoba Health Plan has as its first concern the provision of a high standard of health care in rural Manitoba.

The Plan has four basic principles:

1. Prevention of disease
2. Diagnostic facilities
3. General practitioner services
4. Adequate hospitalization

The Manitoba Legislature at its recent session, without a dissenting vote, passed an Act, introduced by the Government, the title of which clearly indicates its purpose: "An Act to Provide for the Improvement of Health of the Citizens of the Province." This Act establishes the administrative machinery by which and through which we propose to carry these principles into effect.

We believe that prevention of disease, the first of these principles, is the joint

responsibility of the Province and the local community, which in Manitoba is the municipality. This service can best be provided by full-time local health units.

For this purpose the rural municipalities of our Province have been grouped into twenty-four districts, varying in population from 15,000 to 31,000 and with areas of approximately 900 to 1,500 square miles.

All the employees in health units will be civil servants, with salaries paid by the Provincial government. All will have the usual civil service perquisites, such as pension rights, vacation with pay, sick leave with pay, yearly increases in salary, etc.

It is not necessary to go into details of the services that will be available through health units; these are well known to all public health workers. Disease prevention of course will receive the major emphasis but we like also to think of the health unit as a case finding agency, seeking out disease in its incipient stage and bringing it in for diagnosis and treatment. This immediately makes the second basic principle, "diagnostic facilities," a necessity.

Prevention of disease being the only sound foundation upon which to build any extension of health services, no community can apply for and receive diagnostic facilities until it has provided itself with full-time health services.

The Provincial government will establish diagnostic facilities through district and area hospitals by installing therein at government expense adequate x-ray and laboratory equipment. Trained technical and consultant personnel properly to carry out and interpret the procedures requested by the patient's physician will also be provided, as well as the necessary supplies to operate the service.

There will be a small service charge to the individual for x-ray plates, $1 for the first plate and $.25 for each subsequent plate, the total charge in any one illness not to exceed $5. This will mean that every physician in the Province will have close at hand procedures available to help him make a diagnosis in any given case, without any limitation because of increased cost to the patient.

The local health services and diagnostic facilities are estimated to cost $1 and $.50 per head per year respectively. The local government or municipality will be required to pay to the Province one-third of this cost and the services will be available to every resident of the area served, on the request of the individual's physician.

If we are going to obtain young well trained medical personnel to practise in our rural areas we must give them the facilities with which to provide a scientific medical service. Adequate diagnostic services readily available to all practitioners are essential to an improved medical care program. When all our rural hospitals are properly equipped and the technical and consultant personnel are provided, every doctor will have close at hand the tools he needs for proper diagnosis and treatment of disease.

When any community has provided itself with full-time health services and diagnostic facilities and wishes to provide itself with a general practitioner on a prepayment basis, then the Province will subsidize such service to the extent of one-sixth of the cost, not to exceed $.50 per head of population per year.

Payment for provision of such services will be a matter of arrangement between the medical practitioner, or organized medicine, and the community being served, and may be by way of salary, capitation fee, or payment for services rendered, or by any combination of these.

The legislation giving effect to this part of the plan as set out in Part III of the Act to a very large extent

adopted legislation already in existence for engaging physicians as municipal doctors. It does, however, greatly widen the methods by which municipalities can pay for medical care. We consider provision for medical care in advance a vital, basic, and fundamental principle of the plan, and have gone as far as we possibly can to encourage municipalities and physicians to make arrangements to this end.

We believe that a general practitioner service should definitely be defined and for this purpose are using the following definition:

> Any medical, obstetrical or minor surgical service that can be rendered in the doctor's office, the patient's home, or a hospital situated in the community in which the physician practises, and shall include non-complicated obstetrics and uncomplicated fractures, but shall not include any major surgery. Major surgery shall include the removal of tonsils, adenoids, appendix, gall-bladder, etc.

In brief, the family physician should be chiefly concerned with the health care of a child from the time of its conception until the child enters school and for the medical care of all people in his community within the limitations of the definition.

We realize of course that of necessity some very definite supervision of contracts between municipalities and the doctor must be provided. The legislation presently in effect makes it compulsory that all contracts receive the approval of the Minister. A standard type of contract, now under revision, is being used, and as revised will give ample protection to the public as to the services they will receive as well as safeguarding the rights of the physician. It is interesting to note in this connection that the last contract submitted for approval by a municipality gave the doctor more net salary than he anticipated, provided him with a registered nurse in his office, as well as all other expenses, allowed him time off with pay to attend medical society meetings, and gave him a *two* months vacation with pay each year.

No health plan can properly function without well equipped hospitals with an adequate number of beds for the communities' needs. In 1942 a commission was established in Manitoba to study hospitalization and recommend a plan to the government. After two years of intensive work a plan was presented to and accepted by the government. It provides three types of hospitals:

1. A medical nursing unit, or doctor's workshop, in every town or village where a doctor practises. This is a building containing the doctor's office, examining room and emergency room, together with 6 to 12 beds for maternity and medical cases, with of course a labor room and nursery.
2. A district hospital of from 20 to 50 or more beds containing diagnostic equipment, operating room, and all other facilities that go to make a good rural hospital.
3. Area hospitals—these will be completely equipped institutions to take care of all types of medical, surgical. and obstetrical cases that cannot or should not be looked after in a less well equipped hospital in their area.

At each area hospital radiologists and pathologists will be provided and their services will be available without charge on the request of any physician at the area hospital or any district hospital in the area. The provision of at least minimum hospital facilities for every physician and the consultative services of radiologists and pathologists will be another incentive to physicians to provide a good medical service in rural Manitoba.

When the hospital plan is completely inaugurated we will have 4 area hospitals, 33 or 34 district hospitals, and 75 to 80 medical nursing units, besides several other special and general hospitals in the City of Winnipeg.

The cost of providing hospital facilities will be the responsibility of the local community and provision is made in the legislation for raising the money required for buildings and equipment as well as for operating costs by means

of a tax levy on the land of the hospital district.

There is a constant fear of government intervention in business with its beaurocracy. The Health Services Act which controls the operation of The Manitoba Health Plan is so designed as to make it impossible for absolute control to rest in the hands of government officials. The Act provides for the operation of the plan by means of regulations, and no regulations can become effective unless they have first been approved by an Advisory Commission. This Commission is composed of representatives of those who are to provide the service and those who are to receive it. It consists of 3 members nominated by the Manitoba Division of the Canadian Medical Association, 1 member nominated from the Faculty of Medicine by the University of Manitoba, 3 members nominated by the Union of Manitoba Municipalities, and 3 members appointed by the government. The Deputy Minister of Health and Public Welfare is an ex-officio member, so that out of a total membership of 11 only four are directly appointed by the government. This Advisory Commission has been in operation for nearly a year and the coöperation of the medical and other members of the Commission has made excellent progress possible.

A further safeguard in respect to Hospital Facilities is provided through a Hospital Council set up under "The Hospital Aid Act." This council consists of representatives of hospital administration, the Provincial Government, municipal officials and the nursing and medical professions. All matters in relation to hospital districts, location and construction of hospitals must receive the approval of this Council before they are presented to the Minister for consideration, and he in turn has the final advice of the Advisory Commission under The Health Services Act, when required, to guide him.

Provision is also made in The Health Services Act to provide municipalities with special taxing powers through a personal health levy to raise funds for the municipal share of operating the plan. The Act also makes funds available for the training of the necessary medical personnel, both graduate and undergraduate, as well as nurses, technicians, and others who may be required for the purposes of the plan.

The Manitoba Plan will fit in without any difficulty with the Dominion Government's proposal for health insurance. The first stage of the federal government Plan suggests that general practitioner service, hospitalization, and diagnostic facilities must be provided before other benefits can be considered. In Manitoba only hospitalization must be added to complete the first stage of the Dominion health insurance proposals.

This of course cannot be done until more hospital beds are available. As the Dominion Government proposes to provide one-third of the cost of preventive services and three-fifths of the cost of medical and other care, we in this Province will be in an advantageous position as and when health insurance at the federal level becomes law.

Medicine and government must cooperate in any plan for the improvement of health services to our people. Medicine has the technical knowledge required to provide the services. Government has or should have the knowledge as to where the services are required and the administrative set-up necessary for the orderly extension of such services to all of our people.

The Honorable Stuart Garson, Premier of Manitoba, in a public statement said, "We are not regimenting you into the plan. Whether you come in or stay out is your local choice. However, we know that this plan is workable with

the active and enthusiastic support of people who are free to come in or stay out as they please, but who come in from conviction that it is worth while."

We believe that Manitoba's Health Plan is the democratic way of helping our people, particularly those residing on the farms and in the villages, to help themselves.

The demands for the services run far ahead of our ability to provide them, primarily because of lack of trained personnel, but by the end of 1946 over one-half of our rural people will have available a worth while preventive service through the establishment of health units. Diagnostic facilities will likely be available in two areas. Present indications are that probably four new 30 bed rural hospitals will be nearing completion and 12 to 15 medical nursing units or doctors' workshops will be under construction. Twenty-two municipalities have had for some years now legislative authority to supply their residents with prepaid general practitioner service, and the service is already being provided in fifteen.

We look forward with confidence to the day when all our people will live and work and play in the sure knowledge that all the benefits medical science has to offer for the cure of illness, the prevention of disease, and the promotion of health are available to every citizen, no matter where he may live or what his economic status may be.

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Plague Control with DDT and "1080"

Results Achieved in a Plague Epidemic at Tumbes, Peru, 1945 *

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THE certain, rapid, and persistent action of DDT (dichlorodiphenyltrichloroethane) as a pulicide, and the high effectiveness as a raticide of sodium fluoroacetate ("1080"), justify an extension from the rather limited sphere of laboratory experiment to application in the field of these new measures, with the view of eradicating bubonic plague by the elimination, or at least the control, of the reservoirs and vectors of *Pasteurella pestis*. The value of the simultaneous use of these chemical substances in plague prevention will be the subject of a separate report. The present paper deals exclusively with the control, under emergency conditions, of an epidemic of bubonic plague at the height of its evolution.

ANTECEDENTS

The National Anti-Plague Service of the Peruvian Ministry of Health, through an arrangement with the Pan American Sanitary Bureau, assigned to the author the technical direction of an anti-plague campaign in the city of Tumbes, Peru, with the object of impeding the extension of an outbreak of bubonic plague which appeared in that locality during the last trimester of 1945. It was agreed to use only DDT and 1080 in accordance with a previously developed plan. The theoretical bases of this plan may be summarized as follows:

1. Elimination of the flea vector potentially capable of attacking man, which we assumed could be accomplished by the application of DDT in powder form to the floors of human habitations. This procedure we termed "surface application" of DDT.
2. Elimination of the flea vector from rats and rat nests by a second application of DDT to the spaces beneath floors, between double walls and roofs, to dead spaces in general, and to rat burrows and places habitually frequented by rats. We termed this the "subsurface application" of DDT.
3. Extensive application of sodium fluoroacetate ("1080") in poisoned bait to eliminate the murine population once it had been freed from fleas.

MATERIALS AND METHODS

The application of DDT was accomplished by using a "dust" composed of 10 per cent DDT in talc or pyrophyllite, as well as DDT diluted to 5 per cent and to 2 per cent in refined wheat flour; the following dusting apparatuses were used: (a) The Cyanogas Foot-Pump made by the American Cyanamid and Chemical Company; (b) the Cyanogas Citrus Duster, manufactured

* This study has been made possible thanks to a grant-in-aid from the Institute of Inter-American Affairs. Administrative details of the campaign discussed were under the direction of Dr. Benjamin Mostajo, Chief of the Peruvian National Anti-Plague Service. Field work was done with the active coöperation of Mr. Benjamin Mostajo Patrón, Chief Inspector of the Plague Regions of Peru. We wish to express our thanks for the advice and constant aid of Dr. John D. Long, Chief Traveling Representative of the Pan Amercian Sanitary Bureau, Lima, Peru. The Minister of Health, the Director General of Health, the Prefect of Tumbes, and the political and military authorities of the zone gave moral and material assistance to our work, for which we are duly grateful. A detailed report on the situation in Tumbes, and on the campaign carried out, written by the author, Dr. Mostajo, and Mr. Mostajo Patrón, was presented, through the Pan American Sanitary Bureau, to the Minister of Health of Peru; those interested may obtain copies by addressing The Director, Pan American Sanitary Bureau, Washington, D. C.

by the same company; (c) the Degesch Powder Duster, Type 6, used formerly for applying calcium cyanide; (d) the Root "Giant Spot Duster," Model F-4, made by the Root Manufacturing Company. These were the only dusters at our disposal, although other good types are on the market. The foot-pump was used for dusting rat burrows; the spot duster for persons, vehicles, etc.; and the Degesch centrifuge for treating floors and other large surfaces.

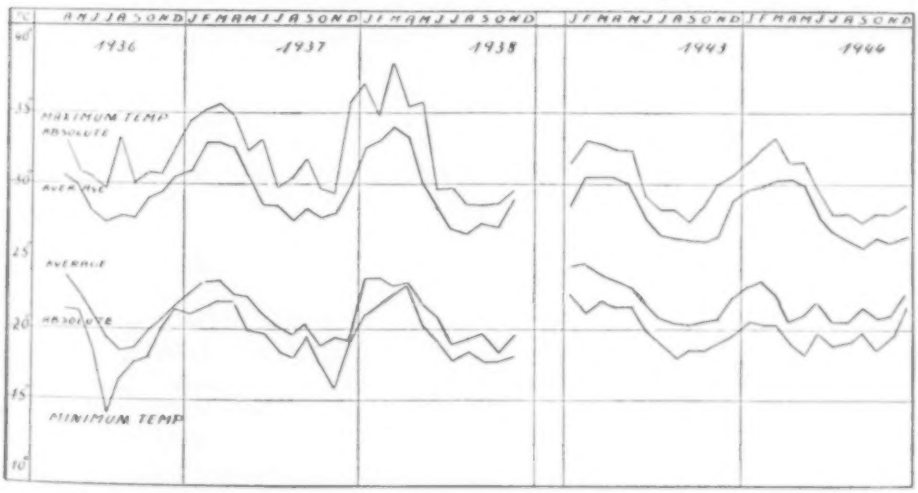
The 1080 (sodium fluoroacetate) was obtained through the Pan American Sanitary Bureau from Mr. Richard A. Ormsbee, Technical Aide, ICC Coördinator Center, Rodent Control Subcommittee, National Research Council. It was used in three kinds of bait or vehicles: (a) water, in 1/1,000 solution; (b) small cakes (using 5 parts of 1080 per 1,000) made with toasted wheat flour, 10 kg.; evaporated milk, 800 ml.; Parmesan cheese, 1 kg.; lard, 1 kg.; and salt, 30 gm. The poison was dissolved in water before adding it to the mixture. The dough was rolled out on metal sheets, dried and browned in the oven, and cut into small square cakes of about 1.0 gm. weight; (c) rolled oats, mixed with poison in the proportion 5 parts of 1080 per 1,000.

For placing the poisoned baits the city was divided into 9 sectors (see map), and the baits were applied so that two contiguous sectors received, in each of three consecutive poisonings, different baits.

Personnel consisted of 1 technical director, 1 assistant director, 1 clinician to care for the sick, 1 physician in charge of sanitating the city, 6 brigades (later 3) for applying DDT, each brigade composed of 1 inspector and 2 laborers, 3 inspectors for applying 1080, and 1 technician and 1 servant for laboratory work. Isolation facilities for patients of both sexes were provided; and a central office and laboratory were set up, the latter with minimal equipment for bacteriological and investigative work.

DESCRIPTION OF TUMBES

The city of Tumbes is the capital of the Department of the same name, in the Republic of Peru; Tumbes Department forms part of the border with the



GRAPH 1—Absolute and Average Maximum and Minimum Temperatures. Meteorological Observatory at Zorritos, Department of Tumbes, 1936–1938; 1943–1944.
COURTESY OF DR. G. PETERSEN

Republic of Ecuador. The city is situated at 3°34′16″ South latitude, and at 80°28′01″ longitude West of Greenwich, at 33 meters above sea level; it is a few kilometers from the Pacific coast, and lies on the banks of the Tumbes River. The population is about 10,000, and there are 1,600 dwellings, nearly all of primitive construction, chiefly bamboo, wood, or adobe. There are no sewers, nor is there a public water system. On account of the rains (December to May) the houses are elevated, leaving spaces beneath which are rat harborages. Climatic data do not exist; but in Graph 1 appear a few figures from the petroleum port of Zorritos, about 30 kilometers to the south. During our stay the temperature varied between 26° and 34° C., and the humidity between 75 and 94 per cent. An imperfect census of the population, not including about 2,000 members of the Army and police, nor the suburban sectors not included in our campaign, gave the following figures: dwellings, 1,357; individual rooms in these dwellings, 3,820; inhabitants of these, 7,388; males, 49.2 per cent (male children, 24.1 per cent); females, 50.2 per cent (female children, 21.9 per cent). The average number of rooms per house was 2.8, and the average number of inhabitants per house was 5.4.

EPIDEMIOLOGICAL FACTS AND FACTORS

Bubonic plague has occurred in Tumbes in 1909, 1915, 1922, and 1940; in the 1940 outbreak, 18 cases were recognized officially.

Rats: *R. rattus alexandrinus,* 95 per cent; *R. r. rattus,* 5 per cent; *R. norvegicus,* so common in other localities in the country, does not exist. The rats live in the spaces beneath floors, between double walls and ceilings, in straw roofs, etc. The number of burrows in the ground is small, and these generally are found in the pit privies; their scarcity may be explained by the sandy constitution of the soil.

Rat fleas: At the beginning of the work, 172 fleas were collected from 38 rats, the general flea index for the rats of the city being 4.5; but the index was 11.3 for the rats trapped in the epizoötic foci, and 2.1 for the rest of the town—97 per cent of the fleas were *X. cheopis.*

Fleas in rat nests: From 31 rat nests the total number of fleas collected was 156, with an average of 5.03 fleas per nest. Thirteen nests had no fleas, which elevated the figure of fleas per nest with ectoparasites to 8.6. Of all the fleas, 6 were *P. irritans,* taken from a single nest in a bedroom, and the rest were *X. cheopis.*

Free-living fleas: There were many *P. irritans* on the floors of the houses; on the earth floors, especially in patios (yards), *Ct. canis* predominated. There were a few *X. cheopis* found on the floors of warehouses, and on the clothing of persons working in the epizoötic foci. One of our laborers contracted plague in one of these foci.

Rainfall: When the plague appeared the rains had not yet commenced. The first rains began at the end of December, and they became torrential in the following months. There was fear that the rain would dislodge the rats and fleas from the spaces beneath the floors, which in part of the city were totally covered with water, into the domiciles themselves.

The epizoötic: The most probable source of the infection in Tumbes was plague-infected fleas transported in sacks of merchandise from the zone of Villa de Eten and Monsefú, in the Department of Lambayeque, about 600 kilometers to the south, where to date human and rodent plague persists. The merchandise was received in the Public Market of Tumbes in July or August, 1945—that is to say, during the "non-plague" season. At the beginning the

epizoötic was slow in developing, reaching its height in September, by which time secondary foci of murine plague had already been formed in different parts of the city. The initial focus of the Market began to produce human cases of plague in October. During this month and the one following at least 21 secondary plague foci were formed, the chief one being that of the house of S. M., which was surrounded by the warehouses and storerooms of the State Tobacco Monopoly, the State Salt Monopoly, the State Department of Warehouses and Shipments. In all of these places dead rats were found almost daily, the carcasses being located behind piles of thousands of sacks of merchandise, stacked in such a way that it was almost impossible to make adequate inspections, since the warehouses were so completely filled. In order to collect the dead rats it was necessary to open passageways between the sacks, a job which took several days. The epizoötic focus in the house of S. M. was beneath a cement floor which on the surface appeared to be in perfect condition; but the ground beneath was honeycombed with rat galleries and burrows. These, beginning at the earth borders, reached various depths and distances beneath the cement slabs, and the floor had to be destroyed to disclose these facts. The peculiar location of this focus explains its slight human repercussions.

Of the 21 epizoötic foci mentioned—scattered about the city as shown on the map—10 were inactive when we arrived; abundant mummified rat carcasses were found in the burrows and in the double walls. In 3 of these foci the epizoötic was followed by 1 or more human cases. The single focus of the Public Market, which was extinguished by demolishing the building, produced 9 cases of plague.

The 11 active epizoötic foci were confirmed as shown in Table 1. In designating these foci as being active, only those rats found dead or captured alive are considered which were proved in the laboratory to be infected with plague; the same applies to the fleas from rats or nests. The relation of the infected rats and fleas with the human cases is evident.

Of 139 rats examined, 38 (27.3 per cent) were positive for plague. Of the total examined 17 were found dead in the house of S. M. (10 of these with plague), and 15 were trapped in the same place (5 with plague) during the first five days of our work in Tumbes. Of the remaining active foci, four were of importance, producing between 30 and 70 per cent of the plague rats. The

TABLE 1

Flea or Murine Plague Foci, Active at the Beginning of the Antiplague Campaign, Tumbes, November 30, 1945

	Location	*Dead Rats*	*Plague Infected Rats (Trapped)*	*Plague Fleas from Rats*	*Rat Nests with Plague Fleas*	*Human Cases of Plague*
1.	Huáscar 324 and 326	+	+	..	..	..
2.	Huáscar 412	+	+	..	..	..
3.	Bolivar 231 (Mr. Maceda)	+	+	+	+	+
	State Tobacco Monopoly	+	+	..	..	..
	State Rice Monopoly	+	..	..	..	..
	Cinema	..	..	..	+	..
	State Salt Monopoly	+	..	..	+	..
4.	Ugarte 119, 159 and 161	+	..	..	+	+
5.	Piura 210, 220 and 230	+	+	+	+	+
6.	Piura 231 and w/n	+	..	+	..	+
7.	Cementerio 129–131	+	+	..	..	+
8.	Jaén 204	..	+	+	+	+
9.	Hospital	..	..	+	..	..
10.	Teniente Vásquez w/n	+	..	..	..	+

majority of the active secondary foci were developing when we arrived.

FLEAS INFECTED WITH PLAGUE

Of 29 lots of rat fleas classified, 13 were inoculated into guinea pigs, 7 proving positive. Of 12 lots of fleas taken from 18 rat nests, 7 were positive for plague on guinea pig inoculation.

THE EPIDEMIC

It is probable, though not certain, that there were cases of human plague toward the end of September, 1945. In October there were at least 6 cases, none of which was diagnosed as plague. In November, before the first case was diagnosed, there were at least 10 more cases. The first case diagnosed was that of a child 2½ years old, the son of the Government physician. Since the cases which occurred in November were still in evolution, it was possible to hospitalize them and to confirm the diagnoses by laboratory examinations. From October, 1945, to February, 1946, cases occurred as shown in Table 2.

TABLE 2

Weeks	*Cases*
Oct. 7–13	1(?)
Oct. 14–20	1(?)
Oct. 21–27	2(?)
Oct. 28–Nov. 3	2(?)
Nov. 4–10	5
Nov. 11–17	5
Nov. 18–24	11
Nov. 25–Dec. 1	3
Dec. 2– 8	8
Dec. 9–15	1
Dec. 16–22	0
Dec. 23–29	0
Dec. 30–Jan. 5	0
Jan. 6–12	0
Jan. 13–19	0
Jan. 20–26	1
	40 *

* Eight cases confirmed only clinically by private practitioners and accepted by us after epidemiological investigation of each case

The distribution of the cases in the city, and their relation with the epizoötic foci, may be seen on the map. Of the 40 cases accepted by us, 14 (35

per cent) died. Twelve of the patients were children of 10 years of age or less; 13 were young persons from 11 to 25 years old; 12 were adults from 26 to 55; and 3 were over 55 years of age. Age limits were from 2½ to 95 years. Twenty-six of the cases occurred in males, and 14 in females. Two cases were ambulatory; 4 were mild; 8 were rapidly fatal, with an average duration of 3 days; 3 had a longer, though fatal, course, with an average duration of 31 days, and with death due possibly to inadequate treatment; and there were 3 fulminating cases, death occurring within 12 hours. The different degrees of gravity of the cases were due, in our opinion, to the progressive diminution in virulence of *Pasteurella pestis* in the fleas, in accordance with the period of extrinsic incubation of the infection, more than to variations in individual resistance. The bubos were localized as follows: Twenty-nine inguino-crural (5 double); 5 cervical; 1 axillary; 1 axillary and cervical; 4 with uncertain or unknown localization. In 2 cases, plague "carbuncle" occurred on the dorsum of the foot, 1 and 3 days, respectively, before the development of the corresponding bubo. The chief symptoms were: bubo, fever, chills, dizziness, headache, vomiting, and in the grave cases, unconsciousness and coma.

The treatment instituted prior to our intervention was excessive. Serum in small doses was given, and sulfathiazole in enormous doses, such as: 42 and 50.5 gm. (in a boy of 9); 52.5 gm. (in a boy of 14); 72, 72, and 73 gm., etc. Secondary manifestations included cutaneous eruptions, edema, oliguria, and incontinence of urine. Apparently sulfathiazole did not influence the evolution of the disease, although the writer has proved its beneficial effects in guinea pigs, which agree with the results already established in the literature.

Of the cases in which the site of infection was known, 9 pertained to the focus in the Public Market; 2 to the house of S. M.; 3 to Alfonso Ugarte Street; 4 were related to the sacks in the warehouses where rats had died; and the rest to diverse foci (see map).

APPLICATION OF DDT

From November 30 to December 10, 1945, 10 per cent DDT powder (Neocid) was applied with mechanical dusters to the floors of 1,357 dwellings, with a total of 3,820 rooms; and also to 47 public offices, churches, barracks, moving picture houses, schools, warehouses, etc. Also treated were the houses, clothing, household goods, furniture, etc., of 30 plague patients, including the clothing of contacts. With special equipment, DDT was applied to 7,000 bales of tobacco and sacks of cereals, and to several thousand empty sacks.

The average area treated per room was 15 square meters. Using 203 kilos of 10 per cent DDT, a total area of 81,000 sq. m. was covered, giving an average of 2.5 gm. of 10 per cent DDT per sq. m. The inhabitants were told not to sweep out the houses for at least a week. This method of using DDT we term "surface application" of DDT.

From the 11th to the 19th of December, 1945, the "subsurface application" of DDT was carried out; that is, the use of 5 per cent DDT (2 per cent in cement buildings) in the spaces between ceilings and roofs, double walls, double boundary walls, beneath floors, in corridors and passageways used by rats, and in general in all "dead" and empty spaces which could be considered as accessible to rats or fleas. In all, 1,006 houses, with 2,643 rooms, were treated with 170 kilos of 5 per cent DDT and 74 kilos of 2 per cent DDT. DDT mixed with flour in strengths of 5 per cent and 2 per cent

proved to be an excellent insecticide against flies and other diptera, except mosquitoes.

From December 20, 1945, to January 19, 1946, the application of DDT was repeated in 1,295 dwellings having a total of 4,026 rooms, using 230 kilos of 5 per cent DDT. In this treatment were included governmental and public buildings of all kinds, and dwellings located in the central part of the city. In all applications, special attention was given to rat burrows and harborages.

Results obtained may be best appreciated by examining Table 3, and may be summed up as follows:

1. The next to the last case of plague occurred 4 days after the termination of the "surface application" of DDT. It had its origin from a sack of rice in the Government warehouse of the Department of Warehouses and Shipments, a site in which rats, coming from the adjoining house of S. M., were repeatedly found dead of plague. Rats which died among the stacked sacks left their infected fleas there. The Rice Monopoly distributed these sacks among local stores, and the case in question, a woman, proprietress of one of these stores, slept beside the spot where a sack of cereal had been left. The final case, which occurred more than a month after the penultimate, was related to the house of S. M., which has been mentioned as the focus of an intense epizoötic. The sick person, before falling ill, had purchased and carried to his house all the wood in a storeroom of S. M. which was located beside the epizoötic focus, and which had been kept closed up to that time. We wish to point out that both the rice warehouse and the storeroom for wood

TABLE 3

Results of the Application of DDT against the Development of a Plague Outbreak, Tumbes, 1945, Judged by the Evolution of Flea-rat Index and the Incidence of Murine and Human Plague

	Before the Application of DDT	*After the 1st Application of DDT*	*After the 2nd Application of DDT*
I. *Rat Fleas:*			
Rats examined	38	36	40
Fleas collected	172	30	37
Global Flea Index	4.5	0.83	0.755
Flea index, epizoötic areas	11.3	5.3	0.86
Flea index, other areas of the city	2.1	0.39	0.66
Per cent of *X. cheopis*	97.0%	100.0%	100.0%
Total reduction of rat fleas		81.6%	83.3%
Bis, epizoötic areas		30.5%	92.4%
II. *Rat burrow fleas:*			
Number of burrows examined	31	13	
Bis, without fleas	13	8	
Fleas collected	156	8	
X. cheopis	150	8	
Average number of fleas per burrow	5.03	0.61	
Bis, per burrow with fleas	6.66	1.6	
Reduction of fleas in burrows		87.9%	
III. *Free living fleas:*			
Free living fleas	Abundant	Very scarce	Very scarce
X. cheopis living free on the floor of the houses	Scarce	None	None
X. cheopis on the clothing of persons	Scarce	None	None
IV. *Rats examined:*			
Rats examined	139	45	49
Plague positive	38	3	0
Per cent of plague rats	27.3%	6.66%	0%
V. *Fleas from rats and rat burrows:*			
Lots of inoculated fleas	25	7	
Plague lots	14	0	
Per cent of plague positive lots	56%	0%	
VI. *Human plague cases:*			
Before application of DDT	29		
During application of DDT		9	
Bis, 2nd application of DDT		1	
After 2nd application of DDT			1

had received as thorough as possible a treatment with DDT; and we reiterate that both instances prove that the application of DDT without the prior removal of stacked sacks and similar merchandise is ineffective, since DDT acts solely as a contact poison. In the tobacco warehouse a direct proof of the existence of infected fleas was the infection with plague of one of our laborers, whose job it was to apply DDT to several thousand bales of tobacco. In this instance, each bale was individually treated—baled leaf tobacco apparently does not repel fleas from the outside of the bales—and no additional cases occurred. To sum up, the two final cases of the outbreak were due to defective treatment of the respective foci, the warehouses, in that only the surfaces of the stacks of baled merchandise were treated with DDT. It is obvious that the cost of a correct application of DDT in warehouses filled with piled merchandise may be beyond the financial resources of the sanitary services; also, an excessive amount of DDT may be required.

2. There was an 81.6 per cent reduction in the flea infestation of rats after the first application of DDT, and an 83.3 per cent reduction after the second. In the epizoötic foci this reduction was in the order of 50.5 per cent and 92.4 per cent respectively.

3. After the first application of DDT there was an 87.9 per cent reduction in the flea population of rat nests and burrows; in the epizoötic foci the reduction was 81.5 per cent.

4. Rat plague was reduced by 76.3 per cent after the first application of DDT, and by 100 per cent after the second.

APPLICATION OF SODIUM FLUOROACETATE (1080) AS A RATICIDE

The city was divided into 9 sectors (see map), and the poisoned baits were placed in the dwellings in 5 localities: floors, rat burrows, "high interiors" (including ceilings, spaces between ceilings and roofs, attics, rafters, flat roofs, etc.); "low interiors" (including spaces beneath floors, spaces between boundary walls, in double walls, and in "dead" and empty spaces of all sorts within the houses); and exteriors, especially in pit privies.

The poisoned baits—cakes, rolled oats, or water—were made up so that a dose was 10 ml. of water poisoned with 1080, or 3 or 4 gm. of rolled oats poisoned with 1080 in the proportion of 5 parts of poison per 1,000, or one cake weighing approximately 1 gm., with the same concentration of the poison as in the rolled oats bait. The baits were carefully placed in an endeavor to keep them out of the reach of children and domestic animals. The rolled oats were handled with spoons; the poisoned water and the cakes were handled with bare hands, but the inspectors were warned not to smoke, and to avoid putting their hands to their mouths. Not more than 5 baits were placed in any one house. No accidents occurred, in placing the poisoned baits, among human beings, nor were there any complaints about the killing of domestic animals, except a few cats.

RESULTS

Due to the shortage of personnel the control of the poisoning was deficient. In Table 4 can be seen the number of doses of each type of bait placed in 1,200 dwellings. The poisoned water was the most difficult to handle, and only 481 domiciles were treated with this method, in which 713 doses (1.4 baits per house) were placed. Nevertheless the results with the water were the most satisfactory, since 151 dead rats were recovered, or 21.1 per each 100 baits, 0.31 per domicile. The 1,648 doses of rolled oats placed in 796 dwellings killed 113 rats, or 6.9 rats per 100 baits, and 0.142 per dwelling. The 2,247 cake baits, placed in 809 houses, killed 51 rats, or 2.3 rats per 100 baits, or 0.063 rats per house. In all, 4,608 baits deposited in 1,200 dwellings (2,086 dwellings, considering independently the dwellings treated in each poisoning) killed 315 rats, a relatively small figure which does not represent the true results, since dead rats were collected and examined only when their presence was reported by the householders. These figures are mentioned only for the purpose of comparing the

TABLE 4

Total Number of Baits Poisoned with Sodium Fluoracetate (1080), Distributed at Tumbes, 1945

(See the text for a detailed description of the different types of poisoned baits used—cakes, rolled oats, or water solution—and also for the exact meaning of the different locations where they were placed)

Type of Bait	Cumulative Number of Houses Treated with Poison	Average Number of Poisoned Baits per House	Total Doses Distributed	Location of Poisoned Baits in the Houses					Control of Poison Activity		
				Floor	Rat Burrows	Low Interiors	High Interiors	Exterior	Dead Rats	Dead Rats per 100 Poisoned Baits	Dead Rats per House
Water solution	481	1.4	713	178	16	153	320	46	151	21.1	0.31
Cake	809	2.7	2,247	339	393	643	551	321	51	2.3	0.063
Rolled oats	796	2.1	1,648	627	182	211	505	123	113	6.9	0.142
	2,086 *		4,608	1,144	591	1,007	1,376	490	315		

* Includes 1,200 different houses

relative activity of the three types of baits used, and not as a demonstration of the raticidal effectiveness of the poison itself. Indeed, in a sector controlled by the inspectors it was observed that the proven murine mortality was 40.4 rats per 100 baits, and 1.204 rats per treated domicile. In another sector checked by the inspectors during only one afternoon the proven murine mortality from "1080" was 13.8 rats per 100 baits, and 0.453 rats per dwelling.

On the other hand, complaints of bad odors (from putrefying rat carcasses) were uniform throughout the city, which suggests that the results considered as not so favorable, from certain sectors, were due only to lack of adequate checkup. The entire population was in agreement in eulogizing the action of the poison and in declaring that there were now neither rats nor fleas in their homes.

In a rural area not included in our experiment, 150 baits were distributed on a banana plantation, and 23 dead rats were recovered in a single afternoon.

Precise data on the raticidal power of the poison will be presented in a future report dealing with studies carried out in the city of Huacho, Peru.

DISCUSSION

The epidemiological situation in Tumbes at the beginning of the plague epidemic of 1945 may be characterized thus: a city in a deplorable sanitary condition, with a climate propitious for bubonic plague, and with a heavy murine population of *R. alexandrinus* exhibiting very high flea indices, the fleas nearly all *X. cheopis*. The infectious agent — *Pasteurella pestis* — imported from an endemic plague zone, encountered a medium favorable for its propagation in a rat population completely susceptible. The epizoötic developed slowly in a single focus—the Public Market—during the season of the year not favorable for the spread of the disease, and then developed rapidly with the beginning of the plague season. Human plague cases occurred in relation to this focus, which was eradicated by the destruction of the Market. The murine infection spread to over 20 successive foci, half of which died out *in situ* due to the scarcity of available murine population. Up to November of 1945 there persisted an

intense epizoötic focus with various others of lesser intensity; and in relation to these foci a total of 40 human cases of plague occurred.

The "surface application" of DDT wiped out the pulicine vectors living "free" in the dwellings, thus protecting the inhabitants. During the first application of DDT about 10 human plague cases developed which had been in the incubation stage at the time dusting was started. Four days after finishing this first application, one case appeared. After the second "subsurface" application, there was a significant diminution in the number of plague rats, infected fleas on rats, and infected fleas in rat nests. There occurred the late development of one benign human case of plague due to the persistence of the infection in a site which was insufficiently treated—a place in which an intense epizoötic had occurred.

It is evident that DDT was surprisingly rapid and effective in controlling the plague outbreak, especially when it is considered that the epidemic occurred in a medium highly unfavorable for the application of eradicative measures, and where the outbreak was just developing. The poison 1080 completed the work of the DDT, destroying the rodent population in a high degree. The rat-flea indices, and those of plague infection, were profoundly influenced by our measures, all being very favorable at the termination of the campaign.

The plan for the work done in Tumbes followed a logical order of reasoning taking into consideration the quality of the medium, the zoölogical situation, and the murine and human infection. We believe that the campaign carried out can serve as an example to be followed in places where plague epizoötics and epidemics are in full swing, and where *R. alexandrinus* (or *R. rattus*) and *X. cheopis* are involved. Preventive measures, or the presence of *R. norvegicus*, would have required other methods of approach, as will be described elsewhere.

Previous laboratory experiments showed that a dilution of DDT mixed with inert powders in a proportion of 0.002 per cent is the minimum dose effective as a pulicide when spread so as to cover uniformly the treated surface. On the other hand, 0.05 gm. of DDT per sq. m., in any dilution, was an effective pulicide in our experience. In Tumbes we applied approximately 2.5 gm. of 10 per cent DDT (0.25 gm. of pure DDT) per sq. m. The higher dilutions require more time to eliminate the fleas. Mixtures of 2 per cent DDT in flour, applied at the rate of 10 to 15 gm. of the mixture per sq. m., are equally effective as the use of 2.5 to 3.0 gm. of 10 per cent DDT in the same area. Three gm. of 2 per cent DDT per sq. m. had the same activity as the previously mentioned mixtures; but the time required for the effect was four times greater. The mixtures of DDT and flour are attractive to flies (which is not the case with the pyrophyllite or talc mixtures), killing them in not over 12 hours. Wasps and horse-flies were also susceptible to this mixture. However, mosquitoes were not eliminated by any of the mixtures in the percentages used, due possibly to the fact that they do not rest on the floors.

Ten per cent DDT was effective against *X. cheopis* embedded in the fur of rats: but it was not lethal to *E. gallinacea*. Rats covered with a heavy dose of DDT, for example, one or two gm. of a 10 per cent mixture, may die from DDT intoxication, as they lick their fur. The application of DDT to floors was effective in eliminating *P. irritans*, *Ct. canis*, and *T. penetrans*. Free-living *E. gallinacea* resisted the action of DDT no better than the other fleas, so that the resistance of this species when embedded in the fur of

rats may possibly be due to the circumstance that, when so embedded, they leave exposed to the action of DDT only those abdominal segments which are protected by a thick coating of chitin. Similar observations have been reported by Davis.[1]

The residual effect of DDT was demonstrated in the persistence of its activity after the first rains had dislodged the flea population from the spaces beneath the floors of the houses.

The initial cost of the DDT application in this campaign was S/.0.03 per sq. m., (or less than $0.005 US). An average of 140 gm. of 10 per cent DDT were used per house, the average amount per room being 50 gm. Costs per house were S/.1.80 (approximately $0.27 US). In using 5 per cent DDT, an average of 193.8 gm. of insecticide was used per house, and 75.3 gm. per room, with a corresponding diminution in costs to S/.0.15 per sq. m. ($0.0023 US), and S/.0.60 ($0.098 US) per house.

We wish to emphasize that DDT is effective against fleas only in the places where it has been applied—it is strictly a contact poison—so that its uniform spread must be meticulously carried out. Rats may transport particles of DDT adhering to their fur; but usually only to their own burrows. Flea breeding places which are not also rat harborages (and thus more liable to treatment) persist in their infestation if they are not directly treated with DDT.

As regards 1080, we recognize that it is the best poison that we have used against rats, and we have proved to our own satisfaction its qualities as summed up by Ormsbee,[2] a high degree of toxicity for rodents, excellent acceptance in different baits, rapid lethal effect, absence of taste and odor, chemical stability, non-volatility, not toxic or irritating to the skin, no tolerance on ingestion of sublethal doses, easy incorporation in baits, and low cost of production. Poisoned baits may be avoided by rats when they learn to recognize them; but this may be nullified by changing the type of bait. There are few inconveniences in using this poison, if it is carefully handled.

Three inspectors, personally placing the baits, carried out three poisonings of the city of Tumbes, using three different types of poisoned baits, in 25 working days, depositing 4,608 baits in 1,200 houses, in 2,086 visits. In other words, each inspector covered 28 houses daily, placing therein 61.4 baits. The cost of the poison per bait (per dose) was high, nearly $0.02 US; but the total cost of the poisonings was less than $76.00 US. The high cost per bait applied was due to the care taken in placing each bait. For reasons given earlier, figures on the cost of the poison per rat killed will not be calculated; they would give a false idea of the cost involved, since we did not find anywhere near the total number of rats poisoned.

In studies now in progress we have found that 1080 is a secondary poison for the fleas which suck the blood of poisoned rats. Even *E. gallinacea* are killed, as well as *P. irritans, X. cheopis, H. suarezi, Ct. canis, Cediopsylla inequalis, R. cavicola,* etc. The rapidity with which the fleas succumb depends on the level of circulating poison in the blood stream of the rats. It will be comprehended that the confirmation of this finding would be of transcendental importance in anti-plague work.

SUMMARY AND CONCLUSIONS

In the city of Tumbes, Peru, which has a tropical climate, 10,000 inhabitants, the majority of the houses constructed of bamboo or wattle (mud and sticks), and which has no public water supply or sewerage systems, an epizoötic

of murine plague, followed by a human epidemic, broke out in the last trimester of 1945. Among the epidemiological factors of importance were the intense murine over-population with *R. alexandrinus*, with a flea index of 4.5 per rat (11.3 in the epizoötic zone), the fleas being chiefly *X. cheopis;* an abundance of rat fleas in the rat nests, with an average of 5.03 fleas per nest (8.6 in the epizoötic zone), practically all *X. cheopis;* an abundance of free-living fleas on the floors of houses, predominately *Ct. canis, P. irritans*, and *T. penetrans;* and the presence of *X. cheopis* on floors, and in the clothing of plague cases. Other important factors in the outbreak were the proximity of the rainy season, which began in December, a temperature fluctuating between 26° C. and 34° C., and a relative humidity between 75 and 94 per cent. The plague epizoötic may have begun in July or August (which are not in the plague season) and progressed slowly until the beginning of the plague season at the end of September. A total of 21 foci were formed, of which 2 were intense, the first of these being in the Public Market. In these plague foci 27.3 per cent of rats found were plague-infected, as were 56 per cent of the fleas found on rats or in rat nests. The epidemic caused a total of 40 human cases, and it was not diagnosed until the middle of November, by which time more than a dozen cases had occurred. All of the cases were bubonic in type, and the case fatality was 35 per cent.

The only control methods used were DDT in powder form (diluted to 10 per cent in talc or pyrophyllite, and diluted to 5 and 2 per cent in refined wheat flour), followed by the application of sodium fluoroacetate (1080) as a raticide. The DDT was applied first to the floors of all houses (1,357, with 3,820 rooms and 7,388 inhabitants), using an average of 2.5 to 3 gm. of 10 per cent DDT per sq. m. (140 gm. per house, 50 gm. per room), to prevent the biting of the populace by infected fleas. The second application was made to the spaces between ceilings and roofs, on the flat roofs, beneath floors, between double walls, etc., using 5 per cent DDT powder. The first method we term "surface application," and the second "subsurface application." A third application of DDT was similar to the two preceding. Simultaneously with the third application of DDT, the raticide "1080" was brought into use, three types of poisoned baits being employed: A 1/1,000 solution in water, a 5/1,000 mixture in rolled oats, and a similar concentration in small dried cakes. In placing the baits, 1,200 domiciles received a total of 2,086 visits, with 4,608 baits being set out, locating them in both upper and lower parts of the houses, outside as well as inside, and also in rat burrows.

The effectiveness of the application of DDT can be appreciated by: (a) the stopping of the epidemic 4 days after finishing the first application of DDT (the one case occurring over a month later was due to the incomplete treatment of a known focus); (b) the 81.6 per cent lowering of the flea infestation of the rats, and the 87.9 per cent diminution in the numbers of fleas found in rat nests, after the first application of DDT. There was a final reduction in the number of fleas in the epizoötic foci of over 90 per cent. Rat plague was reduced 75.6 per cent after the first application of DDT, and 100 per cent after the second.

The results of the use of sodium fluoroacetate (1080) were excellent, as could be judged by partial controls. In one district of the city 40.4 rats per 100 baits were killed, and 1.2 rats per house succumbed to the effects of 1080. In other sectors fewer dead rats were found, but the checking of this factor was deficient and irregular. The popu-

lation was well satisfied with the results of the poisoning.

Only mentioned here, and to be discussed in later papers, are the toxicity of 10 per cent DDT for rats (which regularly and carefully lick their fur) in dosages of 1.0 to 2.0 gm. of the powder applied to the body surfaces of the rat; and the toxicity of sodium fluoroacetate (1080) for rat fleas, which die by secondary poisoning from ingesting the blood of poisoned rats.

The application of DDT, followed by poisoning with 1080, promises to be the procedure of choice in the control of epidemics of bubonic plague.

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Western Reserve Expands Teaching Staff in Preventive Medicine

A series of appointments have been announced at Western Reserve University School of Medicine and University Hospitals, Cleveland, Ohio, looking toward the development of an important center for the study of disease prevention. Five physicians from the U. S. Army staff will join the university and hospital staffs during the coming summer.

John H. Dingle, M.D., will occupy the Elizabeth Severance Prentiss chair as Professor of Preventive Medicine to succeed James A. Doull, M.D., Dr.P.H., who has joined the staff of the U. S. Public Health Service. Dr. Dingle is director of the Commission on Acute Respiratory Diseases of the U. S. Army Epidemiological Board. Dr. Dingle, a native of North Dakota, has a Doctor of Science degree from Johns Hopkins and a medical degree from Harvard.

Other appointments include George F. Badger, M.P.H., M.D., as Associate Professor of Biostatistics. Dr. Badger, formerly Assistant Professor of Biostatistics at Johns Hopkins University School of Hygiene and Public Health, was from 1942–1946 consultant to the Secretary of War in biostatistics. He is presently a Major in the Army Medical Corps.

C. H. Rammelkamp, M.D., is a graduate in medicine from the University of Chicago and also was consultant to the Secretary of War from 1943–1946.

A. E. Feller, M.D., is a graduate in medicine from the State University of Iowa. He was formely instructor in the New York University College of Medicine and a fellow in medical science with the National Research Council at the Harvard Medical School.

R. G. Hodges, M.D., is a graduate in medicine from Harvard in 1936. He was formerly instructor in pediatrics at the College of Physicians and Surgeons, New York City.

Education of Medical Students in Preventive Medicine*

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A WELL informed and coöperative group of physicians in any community is one of the greatest assets that the health officer can possess. If the health department does not have the understanding and support of the practising physicians, his work is much more difficult and often ineffective.

The great proportion of medical students will become active practitioners of medicine, and if they are well informed and properly trained in the broad concepts of preventive medicine, they should, as practitioners, not only aid the health department, but also incorporate preventive medicine in their clinical practice.

1. Thus my first suggestion is that it is the function of the medical college to train physicians in order to fit them to practise preventive medicine in an intelligent and effective way. We should not attempt to train them to be health officers or epidemiologists. We are not obligated to train them to become school physicians, directors of well baby clinics, vital statisticians, industrial hygienists, or sanitarians. Special graduate training in those fields is available to all who desire to prepare themselves for those specialties.

2. We must train practitioners of medicine for the future, and not for the present or the past. Each of our students will have, on an average, 25 years of active professional life. They should neither be trained for the type of medical practice of the *past* 25 years, nor in accordance with our present procedures, but be prepared to meet the needs of the coming 25 years. Thus it becomes necessary to make as close an estimate as possible as to just what the practice of medicine will be during the next 25 years.

TRENDS IN MEDICINE, AND PARTICULARLY IN PREVENTIVE MEDICINE

A. One pronounced trend is a greater realization that medicine is a social science. The powerful influence that social and economic factors may play in production of disease or in promotion of health has long been appreciated by our foremost physicians. But the developments in application of the "exact" sciences to medicine during the past 25 years—the utilization of physics, chemistry, and the biological sciences; the application of new and exact technology—have resulted in a study of *disease* as an entity occurring in a unit called man. Some of us have forgotten that the man who is ill is a social being, part of a family, and that the family is part of a larger unit, the community. It is now clear that an understanding of the impact, in a complex society, of social factors upon the community, the family, and the individual, is of paramount importance in planning for adequate medical care. It

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is clear also that we must train our young physicians to recognize these facts.

B. Changes in our population—We are an aging people. There is ample reason to believe that by 1975, when this generation of young physicians shall have finished their work, 10 to 15 per cent of the total population will have completed six decades of life. Nearly 25 million living people will have celebrated their sixty-fifth birthday. Thus there emerges the necessity for training students in the prevention and amelioration of the diseases of middle and past-middle life. The major emphasis must be in the fields of industrial disease and disaster, the prevention of accidents in the home and on the street (pedestrian fatalities from automobile accidents are in great part a hazard in geriatrics), and especially a study of proper procedures that aid in prolongation of life and prevention of unnecessary suffering and distress from the major degenerative diseases.

3. Our third postulate is that the medical student shall be taught only general principles of the control of diseases that are due to environmental factors. These are reasonably well understood, and control measures are for the most part well applied. Certainly the methods of protection from infection that is spread by water, improper sewage disposal, and through food of all types, are very effective. Air-borne infection is being actively studied, the principles of prevention are being developed, and details worked out. Most of the procedures in environmental sanitation, including industrial hygiene, housing, and accident prevention, are, in essence, engineering problems, and are not of particular concern to the physician, nor part of the training of a medical student. He will never have responsibility for their execution, and although he should be familiar with general principles, he need not be familiar with the details of their technics.

4. The general principles of communicable disease control are reasonably well understood. Great gains are still to be made in lowering the death rate from infections. Much remains to be done in the investigation of etiologic factors and epidemiologic characteristics of infections. A great part of this work may be done by the physician in practice, since he plays such an essential rôle, as source material, in epidemiologic investigations. Thus instruction in control of communicable disease will remain an essential part of a medical student's training.

5. Unsolved fields of preventive medicine—Adult hygiene, particularly prevention of the ravages of degenerative diseases, is one of the fields that we have not developed in our student teaching. These diseases are by far the most important causes of death. Heart disease, diseases of the circulatory system, cancer, nephritis, diabetes, and the great "disabler that does not kill"—rheumatism—all should be considered extensively in preparing the future physician for his successful career.

Furthermore, it is obvious that the mass methods which have been so successful in control of communicable disease, and so useful in sanitation, do not apply to the same degree in amelioration of the effects of degenerative disease.

The prevention of the serious effects of heart disease, diabetes, or arthritis, must be a personalized activity. Successful measures result through an individual relationship of physician with patient. Thus the preventive aspects of degenerative disease are the special province and responsibility of practising physicians.

True, the community, as represented by the health department or voluntary health agency, has an important part to play through the mass method of

approach in the prevention of the ill effects of the diseases of adult life. For example, the methods that have been applied in reduction of death from diabetes in recent years have been most effective, due in great part to specific therapy that is administered by the physician, on an individual and personal basis. But the community has played an important rôle in control through general education of the public concerning the early symptoms of the disease and the necessity for early and adequate treatment. The community has also made provision for prompt and effective hospitalization and other necessary procedures in diagnosis and treatment for those who are unable to afford this care.

One principle emerges clearly as we plan for the future: Control or amelioration of the ravages of the degenerative diseases will not be effective if treatment is begun only after the disease is well established. Success will depend upon the institution of suitable measures at the earliest appropriate moment, and in advance of the appearance of frank symptoms. Dr. Milton Roemer [1] has set forth a schedule of preventive services for each individual which may be applied on a continuous basis, year by year, from infancy to old age. This schedule encompasses all the various measures that are at present considered effective in promotion of the potentialities of each individual. He calculates that this multitude of services, each appropriate for age and sex, may be instituted for about $5 per annum.

One may disagree with the proposed selection of preventive services, and perhaps quarrel with his estimates of costs and other details. But there is no question concerning the soundness of general principles that are involved. They may be briefly stated as follows:

1. Given a proper community-wide organization of medical facilities, a suitable schedule of preventive services could be developed for each individual throughout his life which could be supplied at a modest cost.

2. Preventive services, on a comprehensive individualized basis, cannot be supplied effectively on a fee-for-service schedule.

3. The most obvious development in preventive medicine during the next 25 years must be: Better distribution of medical care to all people on a comprehensive prepayment plan—the plan to include provision for every effective practical individual preventive measure.

THE COURSE OF TRAINING FOR MEDICAL STUDENTS

If these premises are correct, then obviously our training in preventive medicine of medical students must include:

1. A general training to obtain an understanding of the social and economic factors that influence disease, and those that promote health.

2. A study of adequacy of medical care for the community, with consideration of various plans that may be developed for securing adequate medical care, including comprehensive preventive services for each individual in the community.

3. A study of the integration of preventive medicine with clinical medicine.

4. Special consideration of the preventive aspects of degenerative disease. It is here that our primary emphasis must lie, for these are the most important problems of the future.

5. Training as in the past in the theory and practice of control of communicable disease. Emphasis must be placed on the part that each must play as a physician in control of contagion, with stress upon the special responsibility of the physician in the development of epidemiologic knowledge.

6. The teaching of the broad, general principles of environmental sanitation. This includes the control of illness by proper methods of sewage disposal, protection of water supplies, milk and food sanitation, housing and its relation to health, etc.

7. Information concerning community-wide methods for dispensing sound health knowledge to the whole people by proper health education technics.

8. A basic discussion of public health administration and the relationship of the physician to the community health service.

Limited curriculum—The medical student has only so many hours in a day,

and is given a short 4 years to complete his academic training. Introduction of new teaching content, with increase of teaching hours, is not looked upon with favor by curriculum committees. Unless one can demonstrate that the department uses the time assigned to it for effective teaching, then the instructor is not in a good position to ask for more time. Thus some of the material that is now presented to medical students in courses of public health must be given up if new teaching is to be introduced.

What traditional teaching shall we omit? Obviously, we should give up teaching details relating to environmental sanitation. These are not of primary concern to the physician. The field trips to sewage disposal plants, milk pasteurizing plants, food storage and sanitation—all can be taught in a comprehensive way by visual education methods. Furthermore, public health administration need not be presented in great detail.

How much vital statistics should be taught to medical students? Is this a function of preventive medicine? Certainly the department should teach the young physician the basic part that he will play in collection of vital data, and should emphasize the great importance of vital statistics to the public health.

In addition, this department, or some other one, should teach the medical student to interpret medical literature intelligently, to read critically and to understand the probable error, the pitfalls of dealing with a small series, the dangers inherent in sampling, and the hazards of drawing hasty conclusions from insufficient data.

We shall not discuss teaching technics or methods of presentation of material. Interesting and effective teaching devices are limited only by the imagination of the teacher and the resources of the environs. The community is our unit for study. One must utilize all the social and clinical resources that are available, in the university hospital, the local health department, and in the entire community. The department may call to its aid the public health nurse, the medical social worker, the nutritionist of the hospital and of the health department, the school physician, the clinicians in the prenatal and well baby clinics, the directors of tuberculosis and of venereal disease services, the dental clinic director, and the leaders in the voluntary health and social agencies of the area. In addition, the clinicians from other departments of the medical college must be drawn into the teaching of preventive medicine, for our major purpose is to teach the student to integrate the practice of preventive with curative medicine. The psychiatrist and the psychiatric social worker are important assets to this teaching.

In summary, the teachers of preventive medicine and public health in a medical college must be men of vision, resourcefulness, and imagination. They must make an attempt to determine the trends in nation-wide planning for adequate medical care, and foresee the probable major needs of the community for health protection during the next generation. They must be able to coordinate the teaching of preventive medicine in all the university departments, including bacteriology, pathology, physiology, and all the clinical departments, from obstetrics and pediatrics to dermatology and radiology, and must serve as interpreter to the faculty of the medical college of the community point of view. They should prepare the medical student, by precept and example, to integrate preventive medicine with clinical medicine, and should emphasize the one basic principle that medicine is, after all, a *social science.*

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Training for Health Education*

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THE objective of a training program for health education is to assist in the preparation of professional personnel for leadership in the development and execution of soundly conceived community health education programs. Responsibility for success in the attainment of this goal is shared by those engaged in recruitment, those who provide the training, and those who employ and direct the activities of health education personnel. Hence, mutual understanding of the problems and joint planning of recruitment, training, and service programs are essential.

What are some of the factors bearing on the situation?

1. Local, state, and federal health authorities (including directors of some 20,000 voluntary health organizations) are becoming increasingly aware of the importance of health education and are seeking trained personnel who have vision, enthusiasm, knowledge and skill for a task of considerable magnitude and of great responsibility.

2. The background of most so-called health educators is diverse; and the personnel have been recruited mainly from medical, nursing, and teaching professions. According to H. E. Kleinschmidt, "The good physician who is also a competent health educator is a rara avis, probably a biologic 'sport'; and of such we shall never have enough."

3. Relatively little attention was paid to instruction in health education until recent years. Even in the *American Journal of Public Health* references to training were lacking until twelve years ago when Routzahn noted that only a small proportion of health agencies employ staff members experienced in using several techniques required for various forms of health education. W. P. Shepard emphasized in 1937 that training of personnel is the best remedy to cure the old vicious circle comprising inadequate public health funds, incompetent personnel, lack of appreciation leading to still less adequate funds, and, perforce, less competent personnel.

4. Two closely related factors are involved in health education:

   a. Application of health knowledge by the individual for improvement of health practices and attitudes, embracing both health teaching of children in school and adult education.

   b. Acceptance of responsibility for participation by citizens who become aware through health education experiences of the needs and services, and then support the development of adequate health programs.

5. While the official health agency should lead in the planning and development of the health educational program, only by the coöperation of all related official and voluntary agencies and professional groups can a community program be effective. Health education must be the concern of the entire staff of all the health organizations,

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each contributing to it wherever it can do best through its personal contacts and services. To insure that the elements be properly interwoven and a sound focus be obtained, there is required the use of sound educational techniques under the leadership of trained and experienced workers.

6. "Demonstrations by several states and by the Public Health Service during the past four years have shown that people may be motivated to solve their own problems and to utilize the technical guidance of their health department when there is on the staff of the local health department an individual skilled in community organization and also grounded in the fundamental sciences of public health, health education, and public relations. . . . Personnel so trained are unavailable at the present time. Health officers contemplating the initiation or expansion of their health education programs should be prepared to recruit and train personnel to man the program." [1]

7. Suggested qualifications of health educators and functions in health education have been outlined by the Committee on Professional Education of the American Public Health Association, and are being tested in several state and local programs. Additional plans need to be formulated to extend and improve health education in schools and colleges, and such plans must be coördinated with other features of community health education.

8. Courses of instruction have been developed in several universities; but these need continuing review. Groups concerned with employment, recruitment, and training can be helpful in planning.

9. National and state agencies, official and voluntary, and foundations have facilitated training through educational grants.

10. The problem of giving professional training to promising newcomers to the public health field is important; but recent college graduates and graduate students without a good background in the biological sciences require more than a college year of preparation for the technical duties involved in health education.

11. Facilities in existing institutions are taxed. More instructors qualified to lead seminar and laboratory classes, to conduct research, and to supervise field training are urgently needed by universities; and the university and the health agency programs need to be closely linked in order that a comprehensive, realistic teaching program may be carried out.

In considering a training program, it is well to bear in mind certain principles recently enunciated by President Harold W. Dodds of Princeton University.[2] He points out that sound methods of scholarship are the methods of clear and imaginative thinking in any field or occupation. Their materials are not restricted to what is to be found in libraries, but include data from those areas of experience revealed outside of books as well as in them. For example, work on a job may be education in itself.

Training in scholarship, Dodds emphasized, is basically education in the collection and appraisal of facts and values and the building of them into new patterns of thought and action. It means distinguishing between truth and error, and, furthermore, a recognition that facts do not speak for themselves. Raw disconnected facts are useless knowledge if one does not know how to use them. "To be useful, facts must be woven into fresh and coherent relationship, calling for imagination of a high order. . . ." "Critical appraisal must be supplemented by active imagination, in short, by creative thinking. While imagination alone can be unreliable, without it, a man remains a hewer of wood and a drawer of water for his superiors who possess it."

The health educator will be helped by a broad cultural background of education, including the development of appreciations and skills in the use of the English language. He also needs a knowledge of such factors as:

1. The functions, structure, and nutrition of the body, elements of the commoner pathologic processes and elements of epidemiology
2. Motivation and behavior in human life
3. Society as it is constituted—social forces and their control
4. Forces which affect living—environment and economics
5. The scientific method in approaching the process of living, distinguishing science and pseudo-science
6. The processes of education—why we learn and how we learn

There is also need for knowledge and skills which are not specifically professional in nature. The division between essentially basic preparation and strictly professional training cannot be readily drawn. Furthermore, experts in various techniques who are not health educators are commonly needed to assist in editorial work and in the development of films, exhibits, and other graphic materials; and a knowledge of these resources and of how to work effectively with specialists in these fields is necessary.

The Committee on Professional Education of the American Public Health Association, in outlining the above qualifications, properly indicated the importance of sufficient flexibility in training programs to allow adaptation to the scope of work required from the individual. Both in recruitment and in training, four qualities discussed by Albert W. Hull of the General Electric Company as needed for success in industrial research may be suggestive for health education, namely: character, aptitude, attitude toward work, and knowledge.[3] A university's function in regard to aptitude or ability is guidance. While aptitudes can only be recognized, perhaps attitudes can be taught. Hull states that industry is more interested in what a man thinks in his heart, that is, in his attitudes toward his work and his subject and his fellow man, than in what he knows. "If he loves his work, so that days are too short, and has a passionate desire to know, which drives him to read and study, he will soon outstrip the most erudite pedant." University training at best is too brief to provide more than a small fraction of the knowledge that is needed for health education as well as for industrial research discussed by Hull. "The rest must be acquired during his career by continuous study. The university has the task of imparting these attitudes which make self-education possible, and grooving them deeply so that they will endure. But it should not be forgotten that the attitude is the real goal of the training."

Brief reference has been made above to the importance of a background of basic cultural education, of basic science education, of training in education and educational psychology, and of social science education. If there are serious gaps in these areas in relation to the work to be undertaken, the student in training for health education will require more time for preparation than is provided in the regular public health curriculum which is already overloaded for the period usually allowed. The process of recruitment and training would be strengthened if a plan were developed for giving undergraduates while in college as well as college administrators an idea of opportunities in public health and of basic courses desired for preliminary preparation. Students who show interest in these fields might be given opportunity to work in health agencies during summer periods and even for a year or more preceding graduate training. Even after a year or more of postgraduate university training, the worker is likely to feel overwhelmed by the manifold problems to be met and frequently requires another

year of patient guidance in the field to "get down to earth."

Listed below are special areas of knowledge and skill considered desirable for professional competence in health education and for which provision is made in the usual public health training schedule at the university graduate level*:

1. Education in personal and public health to provide a knowledge of:
   a. Physiologic hygiene, including personal hygiene, nutrition, and mental hygiene (Content and methods of graduate instruction can be strengthened.)
   b. Environmental sanitation
   c. Basic principles in the organization and administration of public health
   d. Methods of communicable disease control, including the nature of the causative organisms and methods of transmission
   e. Public health statistics and principles of statistical reliability
   f. Survey methods
   g. Relative importance of health problems and mode of attack
2. Training in public administration to provide a knowledge of:
   a. Governmental and community organization
   b. Community agencies, their functions, aims and interests
   c. Techniques for the successful interview and consultative conference (particularly in public school work)
   d. The qualities of leadership, how to discover leaders and how to work with them
   e. Group-work methods
   f. Principles of planning
3. Training in special skills required in health education, to include ability in public speaking and the conduct of public meetings and knowledge of:
   a. Methods and materials in health education, their possibilities and limitations
   b. The evaluation of sources of material and information
   c. How to write informative and friendly letters
   d. How to compile bibliographies
   e. Methods of filing and clipping
   f. How to write and edit material for publication
   g. The nature of the printing and duplicating processes and their use
   h. How to distribute educational material effectively
   i. The nature, preparation, and use of visual aids
   j. Possibilities of community participation in the development of educational material
   k. Press relations and techniques
   l. Radio methods and techniques
   m. Conference methods and techniques
   n. How to organize and advertize meetings
4. Supervised field training

Carefully planned and supervised field experience or "internship" is regarded as an important element in the training process and in the development of skill and ability in health education.

Programs of professional study in health education can be offered best in those institutions which are providing professional education in other fields of public health, and which have available the required instructional facilities. The seminar, workshop, laboratory, and field work procedures are preferable to lecture methods for instruction in most subjects. To make this possible, however, adequate staffs are necessary, and they should include personnel with practical experience as well as teaching ability. Field training stations must be a fundamental part of the comprehensive plan.

The content and extent of the graduate work required of a candidate will vary according to the amount of undergraduate preparation and the intervals between undergraduate and graduate study and the quality and type of experience of the individual. Under ordinary circumstances, one year of graduate work is too brief a period in which to equip the average student being recruited today for this important task. Judgment and maturity as well as technical knowledge are essential. If one were to enter upon a program of planned study in the first year of university life, this essential training would be strengthened, although an interval of at least a year of practical experience

* Essentially as outlined by the Committee on Professional Education, American Public Health Association.

between undergraduate and graduate training should be seriously considered. The essential basic undergraduate preparation could be obtained by a four years' course leading to a Bachelor's degree with major emphasis upon:

1. The basic health-medical sciences
2. Education, with emphasis upon educational psychology
3. The social sciences

Only students with graduate instruction in the biological sciences relating to public health, or with three years of experience in public health, are qualified to complete the Master of Public Health work in one year. Otherwise, the basic work previously outlined for undergraduate instruction should be followed by a two year program of training at the graduate level to include comprehensive seminar and laboratory courses enlivened by field observations, enriched by contact with leaders in many fields of community activity, and made practical by administrative studies and actual participation in community programs under stimulating leadership. This leadership or guidance, however, can rarely be expected from a health agency or group of agencies unless supplementary supervisory personnel has been provided to assist the regular health department personnel already fully occupied with routine duties. This applies even to organizations which, with foresight, have provided for necessary in-service training of their regular staffs.

Finally, it is not only necessary to study needs and resources to determine the nature of the training program required, but it is essential to check results. We need to see our objective clearly; we need techniques and tools to convey the truth (facts) with brevity and timeliness. Training and teamwork are necessary, coupled with continuing appraisal of methods and materials, and evaluation periodically of procedures used in pre-service and in-service training programs. To facilitate coöperative planning and united action, representatives of the various groups concerned should arrange for a series of conferences and studies under appropriate auspices (possibly the Committee on Professional Education of the American Public Health Association coöperating with the U. S. Public Health Service and the State and Provincial Health Authorities) designed to throw more light on the present situation as a basis for planning for the future.

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Sports Equipment Wanted

The National Council of the YMCA asks for help in collecting sports equipment for devastated countries, particularly Poland and the Philippines. All sorts of sports equipment and clothing are desperately needed—balls of all kinds, gymnasium equipment, sports wear. Send goods to your local YMCA where it is packed and shipped to receiving depots on the east and west coasts.

Problems of Recruitment and Training*

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PROBLEMS of personnel have been accentuated in recent years. This accentuation has been felt in the voluntary association as well as in the official agency. In fact, it is merely a reflection of the total problem of personnel that has been affecting all organizations in all fields of activity. I use the term "accentuation" advisedly, because at all times there are certain problems of personnel, whether recognized or not. When the problem becomes acute it is certain to receive the attention that it needs.

In the voluntary associations, to which my experience has been limited, these recent problems in personnel have not been restricted to any one type of employee but have included administrative workers, nurses, statisticians, health educators, public relations personnel, and the many workers with special skills in the field of rehabilitation.

The immediate problem of personnel today is generally one of finding an adequate number of workers with adequate training, or of providing them with training. It is possible that the causes of these problems and some of the solutions may be common to the voluntary agency as well as to the official agency. The most frequently mentioned cause of personnel problems today is the war. The war has created personnel problems for two reasons. One of these is that a large number of vacancies have been created because personnel have entered military service. Another cause of the shortage of personnel has been that some workers, particularly those in some of the somewhat lower paying positions, have left the field of public health for what they term "more attractive" jobs.

Linked closely with these war-induced vacancies is the fact that the recent military demands for man power have also dried up some of our normal sources of new personnel. Another definite cause of the existing shortage of personnel is the general inadequacy of any previously existing program for recruiting and training. In many of the voluntary agencies, at least, there has not been any real program for recruiting in the past. The greatest number of vacancies that have occurred were caused by retirement or death. These vacancies followed a rather normal curve and were not too alarming. As a result, while certain efforts were carried on to enlist the interest of new workers, seldom were these efforts related to a known need or a planned rate of recruitment. A final cause of some of the personnel problems in the voluntary agencies in recent years has been the increase in income which in turn has created some new organizations and many new positions. In the tuberculosis field alone our income has come up from approximately $6,000,000 in 1940 to nearly $15,000,000 in 1944.

If an adequate job is to be done in the field of recruitment we must first make a study of what we have to offer. A study of what we have to offer should

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include a careful analysis of all phases of employment in the agency or in the field concerned. If during the war we lost certain workers for "more attractive" jobs, we must find out what was unattractive in our jobs. We must see that our working conditions are comparable to those of other agencies in the public health field and also to those of other organizations in the community.

We must explore the opportunities for advancement in our field. We must see that our salaries are comparable to those for other positions requiring an equivalent amount of education and experience. There should be a reasonable opportunity for an alert individual to advance. This opportunity for advancement should exist within the organization in which he is employed; and if by the very nature of things the opportunity for advancement within his own organization is limited, there must be an opportunity for him to advance in other communities if the employee wishes to change his location. To do this requires that we establish certain objective, regular methods of evaluating the performance of an employee to insure that increases in salary, increases in responsibility, and change of location are secured by virtue of ability and not on the basis of personal relationships alone.

For an individual who wishes to make this field his life work, there should be opportunity for retirement at some stated age. His opportunity for retirement should not be too greatly jeopardized by an occasional change of location which brings with it certain advancement.

If in any organization our study of these factors of actual employment reveals weaknesses and situations that are less attractive than elsewhere, the administrative machinery of our organization should be utilized to correct these conditions. Information such as that just enumerated must be available in a sound job of recruitment, because much of that information will be desired by persons who might be interested in our field of endeavor and we must have an accurate picture based on facts to give.

It has been frequently mentioned that civil service requirements at times place legal residential restrictions on the employment of new personnel. Such residential restrictions are not confined to the official health agency. Local boards of voluntary agencies unfortunately are at times just as restrictive in their requirements. Too often they too prefer a home-town boy as the first qualification, with training and merit as a secondary consideration.

It has been said that the voluntary association has at times set the pattern and led the way for official agencies. In regard to employing personnel, the voluntary association has a great responsibility to do a far better job than ever before in making appointments on merit alone. This is a job that requires education of both staff members and local boards of directors.

An adequate job of recruitment must also be built upon factual knowledge of the number and type of positions open, and the probable rate of replacement necessary for these positions.

The National Tuberculosis Association at the present time is engaged in a survey of the professional workers in its field. We are attempting to find out the number of workers employed in each agency, the number of executive secretaries, of health educators, of statisticians, of rehabilitation workers, and of each other type of employee. We are learning the age of each of these employees, and from this we hope to be able to plot a reasonable curve as to what our normal rate of replacement shall be, and whether these replacements are now available, or how many we should recruit and train annually.

In our study we are also attempting to secure a clear definition of the duties

required in each position. It is somewhat dfficult in an organization such as the tuberculosis association to have completely uniform definitions for the duties of, say, a health educator in all sizes of associations. The duties in a large association vary considerably from those in a small association. However, with a clear definition of the duties in each position, it is then possible to establish practical definitions of the qualifications essential for adequate fulfillment of the duties of the position.

Our experience shows that too many local assocations are not clear in their definitions of the duties to be performed or of the qualifications to be required, and occasionally we find an organization that may be clear in these duties and qualifications but extremely unrealistic in its establishment of the salary range for the job.

At the conclusion of this study we in the National Tuberculosis Association expect to be in a much better position to determine the number and types of workers, and the duties and qualifications required. In this study we are also attempting to determine the probable number of new positions to be created within the next five years. I cite this merely as an example of the type of approach that is needed to establish an adequate program of recruitment. Without such a study our recruitment program may be inadequate or may possibly be so large as to develop a pool so great that the workers go begging. If this latter should happen it would doubtless set back any future programs of recruitment.

As far as recruiting itself is concerned, it is not enough to do what has often been done in the past, that is, look to schools of public health for new workers. If every health organization limits its recruiting to schools of public health it will only invite competition between agencies and result in inflation in salaries.

It would seem somewhat logical to start a program of recruiting on the high school level. This could be done with the purpose of familiarizing the students with opportunities in the field of public health and giving them some rather broad and rather general indication of the possible educational requirements. Many teen-age youngsters are groping around for their life work. They know something about law, something about medicine itself, something about advertising, about journalism, and so on, but generally they know very little about the field of public health as such.

Such a program of advance recruitment would be extremely welcome to high school administrators. Our association recently prepared a brief folder[1] describing opportunities in this field and certain educational background required. This was not designed for high school use but has been requested by a considerable number of high school counselors and administrators. Such a leaflet should probably be prepared by an organization like the American Public Health Association to cover the entire field of public health,[2] and should be written for high school youngsters.

In addition to such recruitment, it is necessary to carry on activities at the college level. Recruitment at this level can have two very definite objectives. One is to direct college students into postgraduate study in the field of public health. Some students may also be directed to schools of social work, some of the skills of which are required in certain positions in public health. A second phase of recruitment on the college level can be to secure a certain number of workers for positions now available in the field of public health. In any organization there are a number of subordinate positions which can be adequately filled without graduate education. These workers can be secured

and given immediate orientation and training on the job. They will return to the employing organization good dividends if the training and original selection are adequate.

Returning veterans are another productive source for recruitment. Many of these young men and women have been exposed to experiences which have stimulated their interest in possible opportunities for work in the field of public health. They can and should be approached through employment counselors in the armed services.

Consideration should also be given to recruiting from certain allied fields in which skills exist which are useful in public health work. Among these are the fields of education and social work.

A program of recruiting is not without its headaches. For each broadside on recruiting that is distributed, a certain number of " squirrels " will respond. When this program is undertaken there should be someone in the organization capable by temperament, training and experience, and allowed sufficient time to interview and counsel. Sometimes even the " squirrels " have good points and should be directed into proper channels. Through this counseling it can be determined in many instances which of the young people should secure additional education and which ones would not profit by it.

However, it is seldom that recruiting as an activity in itself will bring to the employing organization a polished worker immediately ready to go to work and to produce on the job. The only way we can get such workers is by promotion or by enticement away from current employers. Seldom does even a graduate of a school of public health who has not had definite experience on a job possess skill and know-how to start producing immediately upon employment; and, as a result, additional training may be necessary.

In our survey on personnel in our own field, we have asked the professional workers to state what shortcomings in education they felt when they first entered the field. It is interesting to note that even graduates of schools of public health are aware of definite lacks on getting into a job. Among educational lacks of graduates of schools of public health we find listed such things as public speaking, business letter writing, community organization, educational or teaching procedures, office administration, news writing, methods of working with committees, and sociology. These are included as educational lacks in questionnaires submitted by executive secretaries and directors of health education.

It would seem that possibly the schools of public health might give consideration to the matter of adding to their curricula courses on certain specific skills and techniques that may be needed more by the workers in the voluntary associations than by the workers in the official health department. Until that time comes, however, and perhaps even after, certain additional training may be necessary for any new worker coming on the staff.

For the very small organization this training may be assumed fairly easily. The staff is small, the relationship to the top is intimate and frequent. Through that contact the new worker quickly, although informally and possibly without plan, becomes trained in the responsibilities and functioning of his specific position.

The large organization can assume this responsibility of training through a carefully planned program of apprenticeship. This will require, of course, a full-time qualified director of personnel or training who will serve as the direct tutor of the individual workers, with department heads and other specialists contributing their due share through arranged conferences.

It seems important in any such train-

ing, even where the worker is being trained for a specific job, that he be given a thorough understanding of his place in the total organization and of the responsibilities and problems of other workers in other departments. Such a training program should, in our opinion, be one of apprenticeship rather than didactic teaching. Presumably the new worker has certain required academic preparation—certainly without this preparation he should not be employed. What this worker lacks is experience and know-how; and possibly the ideal is to give carefully supervised experience under a tutor who can coach and correct. His experience, however, should be definitely part of the general functioning and operation of the organization. Merely homework assignments will not fulfil the function of experience.

Possibly the most difficult job of training is that faced by an organization that is neither very small nor very large. Such an organization may have a chief and several departments of one worker each. Each of these department heads demands time of the chief. Each one is enmeshed in many responsibilities. Supervision and training for a new worker is difficult and time-consuming for such a staff and may not be possible without jeopardizing the regular activities.

For organizations of this size it may be preferable for some parent body to assume a certain share of the responsibilities for training. Under such a plan it is possible to assign an apprentice to such an organization. With that organization he would secure definite experience along previously determined lines. The local organization itself would not be given the responsibility of seeing that the apprentice absorbed all of the education possible through the experience. This responsibility could be placed upon the parent organization, which would go over the experience with the apprentice upon his return from the assignment to see that he had profited from it in the greatest possible degree.

Another type of training program is now being considered by the National Tuberculosis Association. We are considering a fairly extensive program of recruitment, concentrated probably at the college level. This recruitment program would bring workers into the organization for a short period of orientation—probably two to four months. During this period of orientation there would be a small amount of essential didactic teaching on techniques and policies. This would be followed by certain apprenticeship training. During this training and during these months we hope it may be possible to determine which workers are capable of showing real progress in public health work. It may then be possible to have these better candidates obtain added education in a school of public health, which again would be followed by another short period of apprenticeship training.

It is important in every organization, large or small, that there be some one person responsible for problems of personnel. This one person should have the responsibility of watching the new workers, seeing how they develop on the new job, and helping to make such adjustments in training and assignments for each worker as will make for the greatest possible growth within his capabilities. It is necessary that there be a continuous program of institutes, conferences, and meetings so that each worker, both new and old, may continually see his relation to the entire organization and gain the greatest possible growth for his own benefit and the benefit of his organization.

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Accident Prevention*

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PEACE has ended premeditated killing on the battle front, but it has not ended unintentional killing, by accident, on the home front. . . . It is unthinkable that the nation will lose the war against accidents after winning the war against the Axis. This must not and shall not happen."

This excerpt from a letter written by the President of the United States less than a month after V-J Day, to the President of the National Safety Council, clearly expresses the need for a "new emphasis" on the accident prevention phase of public health.

During the war against the Axis, from Pearl Harbor to V-J Day, American casualties resulted in approximately 262,000 fatalities, according to the August, 1945, report of the National Safety Council. During the same period, accidents on the home front resulted in 355,000 fatalities. Our total war casualties, including killed, wounded, missing, and prisoners, amounted to 1,071,000. Permanent disabilities alone on the home front from accidental causes amounted to 1,250,000.

Although the population exposure among civilians at home was many times greater than that among the armed forces, the figures just quoted do emphasize the importance of accidents as a cause of mortality and morbidity and stress the need of a continuing war against accidents on the home front.

This war must be waged in several "theaters" simultaneously. It must be planned to prevent accidents incidental to occupational pursuits, accidents resulting from the operation of motor vehicles, accidents in public places, and, of major importance, accidents occurring within the homes of our citizens.

For a number of years organized accident prevention activities have been carried on in the first three of these "theaters." In many instances these activities have received the support and active participation of official as well as nonofficial agencies, including, for example, federal and state labor departments, state motor vehicle departments, state and city police departments, etc. In the "theater" of home safety, however, there has been, until very recently, little if any coördinated program and only a small amount of active participation on the part of official agencies.

As all accidents, including those classified as motor vehicle, occupational, public, and home, now represent the *fifth* cause of death, the prevention of all types of accidents is a natural and direct responsibility of official and nonofficial public health agencies. The lack of organized effort against home accidents and the close relationship which public health agencies have to the individual in his home environment, would seem to indicate that the prevention of home accidents warrants the specific attention of public health forces. The reasonableness of this concept is borne out by the fact that home accidents alone represent the *ninth* cause of death among our population.

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This high rank as a cause of death exists today notwithstanding the fact that the death rate for home accidents, as indicated by the industrial experience of the Metropolitan Life Insurance Company, has shown a downward trend during the past ten years. Undoubtedly this downward trend has been largely due to generally improved living conditions and the modernization of home equipment. It should be noted that the trend was interrupted in age groups 1 to 14 during the war years, 1942–1944, when in many instances usual adult supervision was decreased as a result of war activities.

The present importance of home accidents as a cause of mortality and morbidity can be emphasized by the fact that during the war period nearly one-half as many persons were killed in home accidents as were killed by enemy action, and more than twenty times as many were injured.

The American Public Health Association, recognizing the need of further emphasis in the accident prevention fields, and particularly the home accident field, two years ago appointed a Subcommittee on Accident Prevention of the Committee on Administrative Practice. This subcommittee in 1944 issued a brief review of the home safety activities being conducted on a state level. This statement was published in the *Spotlight*, January, 1944. It reviewed briefly the work in several states, in two of which, namely, New York and Kansas, the State Departments of Health had assumed the leadership in the home safety programs. It also called attention to the fact that the State Department of Health of New Jersey was a member of the State Home and Farm Safety Committee. The organization of this committee was encouraged by the Newark Safety Council. It is composed of representatives of several state departments, including labor, agriculture, and public information; and of several nonofficial educational groups. The State Health Department of Minnesota is coöperating with the Minnesota Safety Council.

Early in 1944 questionnaires were sent to approximately 300 state, county, and city health departments requesting an outline of past and present activities in the field of accident prevention. The replies to these inquiries indicated that health departments on the whole could at that time report very little in the way of actual or contemplated studies in the home accident field; that some casual educational work was being undertaken, generally in coöperation with other agencies; but that there was considerable awareness of the importance of the field and the logic of health department participation in it.

Based upon this preliminary survey, the Subcommittee on Accident Prevention developed a program for consideration by state and city health officials, planned to emphasize the importance of considering accident prevention as an essential public health service. This program was published in the March, 1945, issue of the *American Journal of Public Health*, and reprints were distributed to health officers, public health groups, and local safety councils.

The program stressed the need of leadership on the part of the health department in the field of home safety, but recognized that the extent to which the department can specialize in accident prevention activities bears a relation to the size of the community and to the diversity of organization within the department. It called attention, however, to the opportunity to integrate the home safety program with current educational and other activities of the official public health agency.

To illustrate the practical application of the program, it was supplemented by a list of suggested home safety activities, indicating the possible administrative or bureau responsibility for each. A brief

summary of suggested activities follows.

The health officer is in a position to arrange for the collection, analysis, and study of home accident statistics to determine the need of preventive measures in his area. He is also in a position to survey the existing home safety educational work of his community to ascertain the need of additional activities in this field. Based upon these studies he may wish to develop and prepare a program within the department; to take the initiative in developing coöperative relationships with other departments of the city government such as welfare, housing, sanitation, fire, building inspection, etc.; and to encourage related activities of nonofficial organizations, including medical societies, nursing organizations, safety groups, etc. If conditions warrant, the health officer might wish to consider the advisability of appointing a full- or part-time safety adviser to represent the department in community activities and to coördinate the safety work of the various bureaus. In addition, the health officer is in a position to include information regarding home accidents and their prevention in regular news releases and other publicity media.

In a study of the home accident field, the need of additional factual data regarding causes and other factors pertaining to the problem is apparent. The bureau of vital statistics is usually in a position to undertake the collection and analysis of these data. The National Safety Council at the request of the Subcommittee on Accident Prevention of the American Public Health Association prepared a four page leaflet entitled "Get the Facts About Home Accidents." This leaflet suggested methods of obtaining these data, including a suggested "Confidential Home Accident Fatality Report." It also described in detail the method of analyzing information for use in developing preventive activities.

The organized health department is in a strategic position to undertake direct educational activities in the homes of the community through staff nurses and visiting nurse organizations. It is suggested, therefore, that the department, through its nursing bureau, arrange for an in-service training course in home safety for its nursing personnel. This course will provide an opportunity to invite other public health nurses in the area to attend. During the course representatives of the nursing bureau may be instructed to submit detailed reports on home accidents coming to their attention; to report on unsafe conditions noted in home premises; and to integrate home safety education with health education in their family contacts.

Through the sanitary inspection bureau an opportunity also exists to determine unsafe conditions in home premises in order that emergency conditions may be reported to proper authorities and in order that unsafe home conditions may be considered in conjunction with housing and health projects. It is suggested that consideration be given to an in-service home safety course for members of the sanitary inspection bureau.

The health education bureau is usually in a position to integrate home safety education with health education wherever practical in connection with the regular activities of the bureau. This may include the distribution of booklets, posters, etc., and a study of the possibilities of additional home safety activities.

Through clinics and other means, the maternal and child health bureau can teach mothers the safe methods of handling infants and younger children. This bureau also has the opportunity to make a special study of accident hazards in the younger age groups.

Through the food and drug control bureau or unit of the department, it is suggested that a study be made of the

use, labeling, and storage of poisonous materials in homes, and that consideration be given to the need of additional regulations and educational material on this subject.

It is a fact that more accidents occur to occupationally employed persons while they are not engaged in their regular work than occur "on the job." A relatively high percentage of these "off-the-job" accidents occur in the homes. Through the industrial hygiene bureau, therefore, employers of labor can be encouraged to supplement their industrial accident prevention programs with activities designed to encourage interest in the prevention of home accidents.

Through the housing bureau, architects, builders, and others can be encouraged to study accident as well as health hazards in the various types of local dwellings. This bureau may also be in a position to suggest necessary legislative action relative to the development of safety factors in homes.

The study of home accident hazards in boarding houses, day nurseries, etc., and the development of legal or educational plans to combat these hazards may prove to be a proper function of the bureau responsible for the licensing of such facilities.

A recent report from the National Safety Council indicates that in addition to the leadership developed by the state departments of New York and Kansas, similar departments of Wisconsin and Tennessee have published occasional material on the subject of home safety. In a number of states the department of health is coöperating with state or local safety councils. This group includes, Iowa, Ohio, Utah, and Indiana. It also includes Minnesota where the state department is coöperating with the Minnesota Safety Council; New Jersey where coöperation is extended through the Newark Safety Council; Kentucky through the Louisville Safety Council; and in Atlanta through the American Red Cross. The Safety Council report also indicates that 24 state departments of health are regularly furnishing statistics on home accidental deaths to the Council.

The possibilities of home safety activities on the part of a state department of health may be illustrated by the program developed and being conducted under the auspices of the Division of Public Health Education of the New York State Department of Health. This division has organized an Advisory Committee on Home and Farm Safety. Under this Advisory Committee several subcommittees dealing with various subjects have been created. These include committees on household safety, safety in housing, farm safety, and off-the-job safety. Several action committees have also been organized, including youth instruction to encourage activities among youth organizations; adult instruction, composed largely of representatives of women's clubs, parent teachers associations, service group, etc.; personal health and safety, composed largely of physicians. In addition, committees on research, legislation, and finance have been organized.

Publications pertaining to these various fields of interest have been issued. For example, a booklet, *Prevent That Accident*, was developed as the result of the Household Safety Committee. A *Home Safety Manual for Public Health Nurses* and a handbook for physicians have been issued. At the present time a handbook for architects dealing with factors of safety in the new or remodeled home is on the press. The division also contemplates the publication of a handbook for home economists and one for women in physical education. At the request of the division, the National Safety Council published a leaflet, *Thank You Mr. Executive*. This dealt with off-the-job

safety and is being distributed by the Health Department to industrial organizations in the state. A brochure, *Stop Farm Accidents,* has been given wide distribution through the State Grange and other farm groups. In addition, posters are issued and items pertaining to the home safety program appear frequently in *Health News,* the official organ of the department.

The Division of Public Health Education, in coöperation with the Advisory Committee on Home and Farm Safety, is conducting rather extensive field work. Conferences have been held in connection with meetings of state-wide organizations such as the New York State Farm Bureau, the Home Bureau, and the 4 H Clubs, as well as with local community organizations, women's clubs, etc. Several Home and Farm Safety Institutes have been held throughout the state. The first of these was conducted at Ithaca under the sponsorship of the New York State College of Home Economics. A unique type of demonstration on household skills is presented as a part of these institutes. It has also been presented frequently at conferences and local meetings of various organizations throughout the state. Through the medium of display spaces at county fairs, large numbers of individuals have been reached. At the Wayne County Fair held in Palmyra last summer, 40,000 persons viewed the home and farm safety displays. Exhibits, films, and demonstrations are offered at many of these county fairs and pamphlets are judiciously distributed.

The Department of Health in New York City has demonstrated how home safety can be integrated with the regular activities of a city department. To acquaint their personnel with home safety problems, an in-service training course was conducted among the health educators, nursing personnel, and inspectors. This course was given in each of twenty health districts of the city. It consisted of ten sessions of an hour and a half duration. The course was conducted with the coöperation of the National Safety Council and the Greater New York Safety Council. Each session was presided over by the respective health officer, and the subject material was presented by a competent authority or authorities in the field. For example, the subject of fire prevention in the home was presented by representatives of the city fire department; the prevention of accidents incident to the use of gas, electricity, etc., was presented by a team representative of the local utilities. Sessions were conducted on a conference basis and demonstration material was utilized wherever practical.

Following the in-service training course, practical community-wide home safety demonstrations were planned and are being conducted in two health districts in the city. It is hoped that the experience developed during this project will shortly be made available to other health and safety agencies throughout the country.

As a further indication of the newer emphasis which is being placed on the subject of home safety in the public health and related fields, attention should be called to the joint project being developed by the National Safety Council, the American Red Cross, the American Public Health Association, and many other agencies. An initial statement regarding this project entitled "A Man's Castle," is now available. The committee conducting this project with the aid of the staff of the National Safety Council has made a study of home safety activities being conducted in various communities. A National Conference on Home Safety has been set up on a continuing basis to aid in correlating the activities of interested organizations in an effective nation-wide effort to reduce home accidents.

It is the sincere hope of the Committee on Accident Prevention of the A.P.H.A. that the program just summarized will prove useful to organized public health groups and will serve to stimulate additional activities in this field. The committee will continue to keep in touch with and report on such activities and will welcome inquiries and requests for further information.

New York State Medical Society Favors Establishment of County Health Departments

A resolution urging the voluntary establishment and maintenance of County Health Departments throughout the state was adopted by the House of Delegates of the Medical Society of the State of New York at the recent 140th Annual Meeting of the Society in New York City. The action took into consideration recent legislation increasing state aid for such departments. The text of the resolution follows:

WHEREAS, the Medical Society of the State of New York is cognizant of the limitations of public health service under part-time health organizations such as now exist in most townships, villages and small cities of the State, and,

WHEREAS, the State of New York after January 1, 1947, through increased state financial assistance to counties will make it increasingly advantageous for counties to establish and maintain modern health services by organizing a county health department staffed by full-time professionally trained medical and auxiliary personnel on a merit system basis and at the same time permit the retention of local part-time health officers able to demonstrate their value as a part of a county-wide organization, and,

WHEREAS, this Society approved on May 9, 1927, the county health department form of organization and subsequently reaffirmed said approval,

WHEREAS, the House of Delegates of the American Medical Association on June 10, 1942, passed a resolution urging the establishment of full-time modern health services to provide complete coverage of the nation's area and population,

BE IT RESOLVED, that the House of Delegates of the Medical Society of the State of New York urge the voluntary establishment and maintenance of county health departments throughout the state at the earliest possible date in order that the existing deficiency in public health administration be corrected.

Practical Aspects of Communicable Disease Control in the Schools*

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THE problem of the transmission of disease from one child to another while at school has always been an important aspect of the school health service. In recent years this problem has diminished in importance, first, because of changes in the natural history of some of these diseases (for example, scarlet fever with its lessened virulence); second, because of the effectiveness of modern immunization procedures; and, third, because of the growing importance of other phases of the school health service, such as the detection and correction of mental and physical defects. Furthermore, there have been many changes in our knowledge of the epidemiology of the communicable diseases. As a result of these changes, radical modifications of our thinking regarding control have developed, and public health thinking must be interpreted properly to parents and teachers.

In the early days some of you will probably remember inspection of long lines of children by a physician every morning for evidence of contagious disease. I can dimly remember what this inspection consisted of. The children filed past the physician with their mouths open and the palms of their hands upright, the idea being to eliminate quickly diphtheria or other throat infections and to look for evidence of late scarlet fever, such as peeling of the hands. Suspicious cases of illness were sent home immediately and not allowed to return to school until long periods of isolation had elapsed. In many instances the brothers and sisters were also sent home and kept at home for even longer periods than the affected children.

I suppose that 40 or 50 years ago, when both diphtheria and scarlet fever were considerably more virulent than they are today and when diphtheria was a very common disease, this rapid screening may have been justifiable. Today, however, at least in New York City, it has seemed to us that handling of the whole problem must be considerably modified.

Let us take, for example, the so-called minor communicable diseases of childhood. These consist of chicken pox, mumps, whooping cough, and measles. The average school child who has not yet had any one of these diseases is probably better off to have the disease when he is of school age than at any other time. Susceptibility to these diseases is variable but, in general, exposure in the age group from 5 to 10 years will give an attack which is of little or no danger to the normal child, and then lifelong immunity; or result in subclinical infection with enough immunity to produce the same result.

In the case of measles, if the date of exposure is known, we have in gamma globulin an agent which can allow the child to have an attack of the disease or receive immunity and at the same time run practically no risk.

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In the case of German measles, with the recent evidence that an attack in the first few months of pregnancy may cause permanent and serious damage to the baby, it is probably very important that all girls get their attack or be exposed, and in one or the other way receive immunity well before the child-bearing period begins.

In the case of mumps, the complication that is of the greatest importance, namely involvement of the testes and to a much lesser extent of the ovaries, occurs only after puberty. If the young school child has mumps before puberty and thereby becomes immune, obviously the most important complication has been avoided.

Susceptibility to whooping cough is on a much lower level and not many school children exposed to whooping cough in the school will catch the disease. Furthermore, the school child with whooping cough is not so likely to have a dangerous attack as a younger child. Perhaps widespread whooping cough vaccination in infancy and booster doses will take care of most of the problem of whooping cough in the near future.

The entire concept of scarlet fever has undergone change recently. It is now well established that scarlet fever is but one of the streptococcal diseases and differs from the ordinary streptococcal sore throat only in the presence of a rash. The rash is due to the inability of the individual to withstand the erythrogenic property of the particular streptococcus which is responsible for his infection. Another person infected with the same strain of streptococcus may have all the symptoms except the rash. He had no rash because he is immune to the erythrogenic factor in that streptococcus. It has seemed rather unscientific that, in the case of the patient just mentioned, with the rash, there should be stringent measures of isolation and even more stringent measures of quarantine of contacts, as has only recently been the procedure in practically all health jurisdictions, while in the case of the individual with all the symptoms and the same potentialities for infecting others, just because no rash is present, restrictive measures are nonexistent.

Certainly in the light of our present knowledge, all types of streptococcal throat infections should be treated alike. The majority of these infections, including scarlet fever, run their course at the present time in a week, and the streptococcus responsible for the disease in many cases is completely absent or is so reduced as to be negligible as soon as recovery takes place. There are probably many more carriers of virulent hemolytic streptococci present in the general population than there are streptococcal sore throat and scarlet fever convalescents. Strict isolation of these until bacteriologically negative would be unsound when the large number of symptomless carriers known to be present in the community are allowed complete liberty. Because of this change in our understanding of the problem of scarlet fever, in New York City at the present time we have reduced the isolation period in cases with no septic complications to the duration of the acute stage, the minimum period being 7 days. This same isolation period now holds for all streptococcal throat infections and is probably a beginning in the right direction. Contacts are no longer excluded from school. In the year which has elapsed since this new regulation has been in effect, no increase in morbidity or mortality from scarlet fever has been noted.

In the case of diphtheria, the problem has become much simpler. We no longer have outbreaks of the disease; in fact, even single cases are uncommon. The immunization of babies and re-immunization by booster doses have all but eliminated this terrible disease from New York. There are, however, some

reservations to a policy of too great optimism. Diphtheria has become an important problem in Europe during the war years and appears to be less amenable to antitoxin once it develops. This has not been the case in this country, but we must continue our persistent efforts at mass immunization of the preschool population if we want to maintain our good record.

Of the other major communicable diseases, little concern need be given to smallpox. In fact, since 1922, no New York City infected case has occurred. As regards the infectious diseases of the central nervous system, meningococcus meningitis and acute anterior poliomyelitis, we know that there are many more carriers of the responsible organisms than there are cases. No scientific investigator believes that restriction of the movements of contacts to clinical cases of these diseases has any material effect upon their spread. Accordingly, New York City does not exclude from schools children in whose households a case of either meningitis or poliomyelitis occurs. And since spread of infection from typhoid and paratyphoid fevers is mainly through the gastrointestinal tract, it has never seemed advisable to exclude contacts to these diseases from school.

Always present in the school population are cases of conjunctivitis, pediculosis, impetigo, scabies, Vincent's infection, and ringworm. In all instances of these diseases the children should be excluded from school until recovered or non-infectious. This procedure is fairly simple, except in the case of ringworm of the scalp. You probably are aware that there have been reports of infection with *Microsporon audouini* in school children in a great many cities, particularly Philadelphia, Columbus, San Francisco, Los Angeles, and Cleveland. In addition, in the metropolitan area there have been many cases in Jersey City and Newark. In New York City about three years ago we had two well defined foci, one in the Astoria district in Queens and the other in Central Harlem in Manhattan. The condition was first discovered by noting an increase in clinical cases, and then, as soon as we did surveys with the Wood light, rather startling figures were obtained, indicating that in these two districts several schools had at least 10 per cent apparent and non-apparent infections.

In order to determine the extent of the problem, the Department of Health bought additional Wood lights and started surveying children in all schools throughout the city. Through June 22, 1945, out of almost one million school children, we examined 630,000 and found 4,000 infected. The procedures instituted to control the infection have been as follows:

1. Exclusion from school of all children with ringworm of the scalp.
2. Reference of these children to a proper treatment agency. Such agency is either the private physician, if he has facilities for treatment, or a clinic with such facilities. Arrangements have been made with several such clinics in the city to accept children referred to them.
3. Follow-up of children under treatment agencies to insure that treatment is effective and complete.
4. Frequent resurveying of epidemic schools to discover additional cases at the earliest possible moment.
5. Reëxamination with the Wood light of excluded children who have been treated before return to school, and for checking of suspicious cases.

In addition, parents have been instructed by treatment agencies in precautions necessary to prevent spread of the infection from infected children to others in the family. These precautions include having the infected child sleep in a separate bed, individual use of toilet articles, proper care of the scalp, etc. Children with ringworm of the scalp are not permitted to visit barber shops, and barbers and beauty parlor operators have had the condition called to their attention.

The consensus of opinion of a group of dermatologists called together to consider the problem was that infections with *Microsporon audouini* could be properly treated only by x-ray epilation and, in accordance with this opinion, the county medical societies within the city sent out letters to all members calling attention to the outbreak and giving the opinion of dermatologists regarding proper treatment.

At the present time the situation in New York City has become very favorable. Repeat surveys indicate that schools have infection rates varying from no cases at all to a little over 2 per cent. Accordingly, we have discontinued mass surveying and are limiting our control efforts to schools where clinical cases are discovered.

Looming on the horizon are newer methods of control of communicable disease, control by physical means. In several parts of the East studies are now being carried out to determine the effect of ultra-violet irradiation of the air on the incidence of respiratory disorders. Aerosols are receiving consideration, and most recently the use of oil on the floors of hospitals has been shown to be of advantage in reducing the bacterial population of the air. Perhaps the schoolroom of the future will have all of these measures. There may be concealed ultra-violet lighting, diffusion through the air-conditioning system of germicidal aerosols and invisible coating of oil on the floors, walls and furniture. At any rate, we can be sure of one thing: there will be changes in the way we take care of the common communicable diseases.

A.J.P.H. War Volumes Dispatched to War Areas

Readers of the *American Journal of Public Health* will recall that the Association has received donations of back numbers to be accumulated into volumes for libraries and other centers in war-torn areas. As a result of the generosity of our readers it has now been possible to make available several score of complete journals for the war years and these are being sent as rapidly as transportation facilities permit.

Earlier shipments which went to European points have been acknowledged with very keen appreciation. In many cases these were the first technical journals in medicine or public health which had reached the libraries in several years and they were read with great interest. Particular appreciation has been received from France, The Netherlands, and China.

More recently, through the coöperation of the United Nations Relief and Rehabilitation Administration and Dr. Henry R. O'Brien of the U. S. Public Health Service staff attached to UNRRA, copies have been forwarded to Singapore, Batavia, Rangoon, Bangkok, Saigon, Hongkong, Kuala Lumpur and the Philippine Islands. These shipments were made through the Bureau of International Exchange of the Smithsonian Institution in Washington, D. C. The Association continues to receive shipments of back numbers of the *Journal* for this purpose.

Developments in the Science of Nutrition during World War II*

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IN our struggle to conserve human health during the war period few things have stood out more clearly than the need for good nutrition. It is no mere accident that the first major world-wide movement to get under way in building for the post-war years was the Hot Springs conference on nutrition, followed by the meeting of the Food and Agriculture Organization in Canada. We present some of the more striking developments that have come about within the war period.

First, in the field of clinical nutrition, there has been a sharp awakening to the fact that over the entire nation there are only a few physicians who have had sufficient training to be recognized professionally as specialists in nutrition. The Public Health Service, the Rockefeller Foundation, the Nutrition Foundation, and other agencies have provided assistance toward training physicians who can meet the new challenge. These specially trained men and women can, in turn, steadily raise the level of public service in our hospitals and clinics. Of perhaps greater importance, they can modernize medical education in regard to nutrition, as faculty members of our schools of medicine and public health.

Advances in biochemistry, physiology, and pathology, both in schools of agriculture and in schools of medicine, have brought the science of nutrition to a point where medical and public health professional groups can extend formal recognition. One can cite with some satisfaction the relatively new developments in medical nutrition training and research at Harvard University, Columbia University, the University of Cincinnati, Washington University, Vanderbilt University, and Tulane University. In each case there is a strong team of physicians and biochemists at work, with essentially full-time programs of research and teaching in nutrition. These are but specific examples of a broad trend.

Second, there has been a very significant advance in developing techniques of appraising nutritional status. For example, with as little as two or three drops of blood from a fingertip, it is possible to measure accurately the concentrations of vitamin A and carotene, hemoglobin, phosphatase, plasma protein, and vitamin C.

Distinct headway has been made, too, in recognizing tissue changes that characterize the early and chronic stages of moderate nutritional deficiencies. Despite the disagreement in regard to details, those who are most active in the field are progressing steadily toward common agreement.

This development is important because it has advanced the recognition of faulty nutrition into a zone of everyday consideration. In this new zone nutrition is of concern to a large fraction of our population and therefore

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reaches broadly into public health training and medical practice.

The need for guidance, especially in feeding military personnel, led to distinct progress in such fields as the following:

1. Improved convalescent treatment of men subjected to liver injury. High protein diets and rest have been reported to shorten the convalescent period by 50 per cent after attacks of infectious hepatitis. Protein intakes in the range of 250 grams per day, with a low fat intake, have been widely adopted.

2. The importance of one of the newer and less stable members of the vitamin B complex has come to light very rapidly. Deficiency of folic acid has been rather clearly shown to be a factor in making the intestinal tract more subject to disease, and clinical tests have indicated its value in treating both sprue and certain types of anemia.

3. Other nutrition studies have demonstrated the importance of proper food in relation to optimal resistance to cold, to impaired night vision, to fatigue, and to excessive heat exposure. In the latter case, the most critical dietary item proved to be a generous water intake, with lesser importance attached to salt. In the latter case, optimal results were generally achieved by supplying the requisite amount at mealtime, incorporated in the food. An item of special interest in the high temperature studies was the degree to which many individuals can become acclimatized, including metabolic readjustments, within a few days. Early claims of basic changes in vitamin requirements to meet high environmental temperatures were not confirmed.

Strangely enough, the study of possible gains in tolerance of high temperatures as related to varying intakes of carbohydrates, fats, and proteins has provided little progress.

In the case of altitude tolerance studies, a clear-cut advantage was established, indicating a ceiling gain of roughly one-half mile, following a single meal relatively high in available carbohydrates.

4. Another aspect of a combined food and nutrition study that advanced rapidly during the past few years has been the study of nutrient losses during storage and preparation. Vitamin C had been studied fairly extensively in earlier years, but the new work demonstrated large losses also in members of the vitamin B group, notably thiamine and folic acid.

5. In the European theater repeated appraisals of mass feeding programs have been characterized by emphasizing the importance of potatoes, cereals, and green or yellow vegetables. This combination can evidently constitute a good sustaining diet, approaching optimal economy in terms of land usage and man power. Such a national dietary admittedly is monotonous and unattractive and it can be improved upon nutritionally but, on the whole, the results during long periods have been surprisingly good.

Another pattern of feeding was developed extensively in western Europe during the war; namely, a special provision for vulnerable groups, to supplement the above "iron ration" for civilians.

Pregnant and lactating women and small children were given special and often almost complete allocations of very limited high priority foods such as milk, eggs, and citrus fruit. In England especially the results of improved nutrition seem to have been reflected in a steady improvement in maternal and child health, despite the increased exposures and other stresses of the war. The British record adds supporting evidence to the reports published by Dr. Stuart and his associates of Harvard University, and by Dr. Tis-

dall and his associates of the University of Toronto.

It may be interesting to note that the Children's Bureau of the Department of Labor has recently announced the results of a comparative study of this country's birth rate from 1933 to 1943. This study shows that the infant mortality rate was cut 31 per cent, from 58 to 40 deaths per 1,000 live births.

It is too early to predict confidently what effect improvement in nutrition will have upon the current high incidence of dental caries in America and Western Europe. There is a considerable body of evidence to indicate that dental caries should be less severe as a result of increased intakes of vitamins A, C, D, and niacin, together with increased consumption of high quality proteins, calcium, and fluoride. Certainly the high percentage of rejections from military service during 1941 and 1942 because of bad teeth led to increased recognition of the problem. The following quotation from an army medical officer is enlightening:

> Records reveal that at the beginning of the war, 9 out of every 100 selectees were rejected for one or more dental deficiencies. The only requirement for entrance into the Army was that there should be at least three serviceable, opposing, natural masticating teeth and three serviceable opposing natural incisors. Dental defects were the leading cause for rejection, eye defects ranked second, mental and nervous defects third, and cardiovascular defects fourth.
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> The rejection of this large number of men necessitated the lowering of the dental requirements to meet the demands for induction and man power. Accordingly, the dental requirements were reduced in March, 1942, and again in October, 1942; since then approximately 1 selectee per 1,000 was rejected for dental deficiencies. Men can now qualify dentally for the Army who have two jaws.

Those who are especially interested in maternal and infant nutrition are looking forward to the series of papers by Drs. Hoobler and Maynard, and their associates, to be published soon in the *American Journal of Diseases of Children*. These reports will give new and extensive information on the composition of human milk and cow's milk, together with careful estimates of infant and maternal nutritive requirements.

One of the important fields of nutrition deals with the interrelationships between different nutrients. For example, certain degrees of interplay between sodium and potassium and between calcium and phosphorus have been recognized for many years. Again, a degree of relationship between thiamin requirement and fat intake has been long recognized. The discovery of a reciprocal balance in requirement for the anti-pellagra vitamin and a specific amino acid, as shown in 1945 by Dr. Elvehjem at the University of Wisconsin, opens up a new area of exploration. Much practical interest attaches to the discovery, because it affords a definite basis for explaining two things that have long aroused much speculation: (1) the relation of corn consumption to pellagra, and (2) the curative or preventive action of high quality protein foods such as milk, even though these foods apparently did not contain large amounts of niacin.

One of the most difficult problems in nutrition is to evaluate the overall gains in health that might be achieved by intakes of specific nutrients in excess of the quantities that will protect the body against definite signs of deficiency. At Columbia University, Dr. H. C. Sherman has reported on a long series of experiments with rats, based upon different levels of vitamin A intake. The results demonstrated gains in health at levels well above those required for normal growth and freedom from specific signs of deficiency.

At Washington University, Dr. C. F. Cori has just reported a new path by which sugar can react when it is started on the way to being either burned or

converted to fat instead of being stored as starch. His work demonstrates for the first time in history a direct chemical basis for the function of two glandular hormones related to the use of sugar in the animal body. Dr. Cori's work goes a long way in giving a clearer picture of diabetes and related diseases. Hormones have been recognized for a long time as controlling agents in the body, but this is the first time that anyone has been able to demonstrate so accurately their method of functioning. In Dr. Cori's work we see the reactions of sugar regulated by an interplay of two hormones which act on the newly discovered catalyst, which is a crystalline protein.

The attention given to nutrition in World War II by the Office of the Quartermaster General and the Office of the Surgeon General stands in sharp contrast to experiences during World War I. Their problems involved keeping the soldier fit to fly at high altitude and speed; to perform complicated and precise tasks requiring delicate coördination; to fight in the tropics or the arctic; and to live on combat rations for days or weeks and months on end. The training and discipline in seeing that a soldier in World War II was not only well fed but properly fed will no doubt be reflected in the eating habits of the soldier as he returns to peacetime pursuits.

While not a development of the war, because it was conceived and organized before the war, a new form of research organization has been developed during the war period for the purpose of providing basic information in the science of nutrition.

The Nutrition Foundation was founded by the food industry as an acknowledgment of their responsibilities in the protection and advancement of health through scientific progress in nutrition. The entire program is one of public service, and distinguished representatives of the public serve on the governing body. The quality and independence of the research program is safeguarded by the referee action and counsel of fifteen outstanding research scientists. The program is devoted to finding (1) what quantity of each of the 40 or more essential nutrients is required for good nutrition, (2) how each nutrient functions inside the body, (3) how each nutrient can be used to protect human and animal health, (4) how each nutrient can be measured accurately either as it functions in the body or as it comes into being on a farm and later takes its course through the channels of commerce to the ultimate consumer, and (5) education to facilitate the application of new and sound information.

In conclusion, it seems fair to suggest that the many recent practical gains toward protection of health by means of improvements in food intake will be followed by further gains in proportion to our advances in basic understanding of food composition and the function of foods inside the body.

A Study of the Nutritional Status and Food Habits of Otomi Indians in the Mezquital Valley of Mexico*

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THIS is a report of a nutrition study in four Otomi Indian villages in the Mezquital Valley of Mexico, two of which were surveyed from October to December of 1943, and the others in March to September of 1944. The Mezquital Valley lies 60 to 120 miles to the north of Mexico City and is traversed by the Pan-American Highway. The four villages lie in the southern end of the valley about 75 miles from Mexico City. The people are predominantly Indian, although some mixture with white blood is apparent.

Most historians believe that the Otomi Indians were originally inhabitants of the valley of Mexico, the site of the present City of Mexico, but were driven into the surrounding areas by successive Indian invasions ending with that of the Aztecs. In the main they still cling to their native customs in spite of the Spanish influence dating back to the first half of the 16th century. Otomi is the chief language, although in the first two villages, close to a town of about 3,500 population, nearly all spoke Spanish also. In the other two villages a large percentage of the population spoke only Otomi, and here the people were more ignorant and suspicious and their coöperation was more difficult to secure.

The altitude of the region is about 2,000 meters (approximately 6,500 ft.), and the climate temperate (average temperature, 1921–1935, 16.3° C., maximum 34.5°, minimum 5.5°). The area is exceedingly arid and essentially unsuitable for agriculture in the absence of irrigation. Parts of the valley are irrigated, but the villages studied were not significantly affected thereby. The average rainfall for the years 1921–1935 is given as 440 mm., with an average of 52 days in which rain exceeded 0.1 mm. Rarely is a fair crop obtained, although agriculture remains one of the chief occupations of the inhabitants. Prior to the present land movement it was a region of large ranches where, in the absence of irrigation, the chief industry was the production of pulque, the fermented juice of the "maguey" (century plant). When the large estates were subdivided most families acquired small plots on which they attempt to grow something, chiefly corn or beans, but the yield is usually extremely low. Pulque production is said to be diminishing since it is best adapted to large

* The studies and observations on which this report is based were conducted under the auspices and with the support of the International Health Division of The Rockefeller Foundation in coöperation with the Ministry of Public Health and Welfare of Mexico and its subdivisions: the National Institute of Nutrition, the School of Hygiene, and the Training Center for the School of Hygiene.

scale production, but it is still important in the economy and nutrition of the people of the region. Another important occupation of the inhabitants is weaving the fiber of the maguey (agave). In the first two villages this is made into crude rugs or mats, in the others into coarse squares of cloth called "ayates," which are used chiefly for carrying purposes.

The people live in small, one-room, dirt-floored huts made of maguey leaves placed on a crude pole frame. These are quite permeable to the elements, even to rain. A few live in adobe or stone structures. The dwellings are low, blend with the landscape, are commonly concealed by a cluster of cacti or low trees, and are usually rather widely dispersed and often difficult to find. One might be in the center of a considerable settlement and yet consider himself in a region practically devoid of habitation.

Clothing is poor and meager, and the majority of persons possess a single garment which is used until worn out and infrequently washed. The worn clothing of parents is commonly passed on to the children. The poor personal hygiene of the people may be attributed largely to economic conditions, and to the scarcity of water. Each village usually possesses one or two wells, generally very deep, and considerable labor is expended in raising and transporting the water to the dwellings. Louse infestation is practically universal. In the first two villages infestation was 90 and 95 per cent, respectively, and most likely it was not less in the others. Typhus is endemic in the region, but no cases were seen in these villages at the time of the survey.

A record of family income and expenditure for food was kept for all families. Twenty-five per cent of these records were analyzed and showed an expenditure of only 6.68 pesos (equivalent to $1.38) per week per family, and 1.64 pesos (equivalent to $.34) per week per person. This average is based on the market value of practically all food consumed with the exception of part of the pulque and of a variety of edible wild plants eaten to which no monetary value can be assigned. The pulque is usually produced by a few individuals, and sold to the rest of the village. However, many families tap a few maguey plants and produce a small amount for their own consumption. It should be emphasized that prices were extremely high for Mexico at the time of this survey, with corn, the predominant food item, selling for as much as 50 centavos a kilo in the local market. An average of 75 per cent of the total income was spent on food. Under such conditions it was amazing that the people were able to subsist.

Sanitary facilities are practically nonexistent and medical care is meager. Well water is unsafe, which may in fact account for the large pulque consumption. Because of the dryness and the temperate climate of the region, many of the so-called tropical diseases common to other parts of Mexico are absent. The main causes of death, according to health department records, are first pulmonary diseases, particularly the pneumonias, and second intestinal diseases (diarrhea, enteritis, dysentery). The birth rate (approximately 55 per 1,000), death rate (approximately 31 per 1,000), and infant mortality are all very high.* The high birth rate and high death rate in children and young adults is shown in the records of the number of live and dead children in the clinical histories of these women. Women between 35 and 40 years of age had an average of six to seven children, of whom approximately 40 per cent were dead. Nearly 60 per cent of the children

* We are indebted to Dr. Miguel E. Bustamante for his aid in securing these vital statistics.

of women of 50 years and over were no longer living.

It is obivous that economically and culturally the region is very backward, in fact it is looked upon as one of the most, and perhaps the most, depressed in the country. We have not seen a poorer region in the course of rather extensive travels in Mexico.

PROCEDURES

In so far as possible the entire population of each village was examined. Once confidence was obtained the people were reasonably coöperative. Each individual received a careful medical history and physical examination, special attention being directed to possible symptoms and signs of deficiency disease. The cornea, bulbar conjunctiva, gums, and tongue were examined by slit lamp and biomicroscope. Near the conclusion of the survey a dentist with special training in public health spent a few days in each village and examined the mouths of all persons available.

group, a fairly accurate census was eventually obtained.

A record of food consumption was obtained on both a household and an individual basis. Each family was visited daily for one week, usually at the time the main meal was being prepared, and the composition of the dishes was recorded. Little or no cooking was done at other times. By means of a balance and measures actual weights and volumes were determined. A record of consumption by individual members of the family was kept on the basis of household measures or in terms of portions of the dish eaten by each member of the family. Foods eaten outside of the house were also recorded. On the first day of the visit an inventory of the foods present in the house was made and a record kept of those acquired by purchase or otherwise. Waste was also measured. At the end of the week an inventory of unused food was taken. This inventory and the purchase record were checked against the combined indi-

TABLE 1

Census of Villages and Proportion Examined

Village	Number Inhabitants	Persons Examined		Number of Families	Families Completely Examined		Persons Examined by Dentist	
		Number	Per cent		Number	Per cent	Number	Per cent
Bothi Baji	197	178	90	38	26	68	111	56
Las Palomas	98	86	88	20	13	65	57	58
Boxaxni	585	499	85	116	81	70	270	46
Santa Mónica	269	203	75	52	25	48	154	57
Total	1,149	966	84	226	145	64	592	52

Table 1 gives the total census and the per cent of persons and families examined. The group receiving the special dental examination is relatively small, since the dentist worked so short a time in each village. An exact enumeration of the people in these villages is hard to obtain, owing to the difficulty in finding some of the houses and to the suspicious attitude of many of the inhabitants. But because of the prolonged period of residence by the survey

vidual consumption records of the family in order to detect any gross errors or discrepancies. The records usually pertained to seven consecutive days. This was not true of all records, but in such instances a Sunday and a market day (the days of greatest change in food consumption) were always included. No significant differences were apparent in these two types of diet records.

From the weekly records of indi-

vidual food consumption, average daily intakes of calories, animal and total protein, carbohydrates, fat, vitamin A, thiamin, riboflavin, niacin, ascorbic acid, calcium, phosphorus, and iron were calculated. No correction for cooking losses seemed necessary. The analytical values for tortillas were obtained from tortillas as prepared for eating. Pulque, the major source of vitamin C, was of course drunk without cooking. Chili, whether dry or green, was nearly always merely ground and eaten uncooked. In general the wild greens would appear to be about the only food in which the cooking losses would be of much importance, and these were usually not cooked excessively.

The tables used in the dietary calculations are based in the main on the analysis of foods collected in Mexico during the time of this study, many of them from the region being surveyed.[1] It was possible to obtain analyses on relatively few (often on only one) of the samples of each food, and it is realized that such calculations may be inexact. However, we believe that the error is less than if calculations were based on data from other countries.

Blood samples were taken from approximately 90 per cent of the persons receiving the physical examination, though not from small children, usually not from those under 2 years. Of approximately 20 ml. of blood drawn from each individual, about 4 ml. were oxalated with a mixture of dried potassium and ammonium oxalate,[2] and used for the hematologic determinations, including hemoglobin,[3] hematocrit,[2] and red cell count. The remainder of the blood was used for determining total serum proteins and albumin by the quantitative biuret method,[4] serum carotene and Vitamin A,[5] and ascorbic acid.[6] In children under 5 years phosphatase was also determined.[7] A blood smear for malaria examination (both thick and thin) was obtained from the majority, and a stool examination was done when it appeared indicated. Soon after withdrawal the blood samples were placed in a iced jug, and they were transported by automobile to the laboratory in Mexico City the same day. We investigated the stability of the blood constituents under this method of handling and found that no change occurred.

FOOD HABITS

As in other parts of Mexico, the basic foods here are corn (almost invariably eaten as tortillas), dried beans, and chili peppers. Supplementary foods are chiefly those readily available locally, the most important of which is the fermented maguey (agave) juice, pulque. Meat is eaten in very small quantities and is usually from sheep or goats, since these are the animals which thrive best in this arid region. Often the blood alone is eaten and the meat is sold to buy cheaper foods. The same is usually true of the small amounts of milk, eggs, and poultry produced. Rabbits are practically the only wild game eaten. Beans are relatively expensive and are used in lesser quantities than in many other parts of Mexico. Chili consumption is large. Small amounts of onion, garlic, "tomate" (a plant of the ground cherry family), and less commonly, tomatoes (jitomates) are used for flavoring purposes. Lard is the commonest cooking fat, although the amounts used are relatively small.

Almost every conceivably edible plant, including many of the cacti, are used as foods. Many grow without cultivation, during the rainy season, and by most people would be considered as weeds. A variety of worms and insects are also eaten with relish. By these means a diet of considerable variety is attained. Some of the "weeds" are surprisingly nutritious, e.g., the prolific

malva (mallow) is an exceptionally good source of vitamins A and C and calcium and iron.[1] Others of some importance in the diet include hediondilla (lambs' quarters); tunas and nopales (prickly pear cactus fruit and leaves, respectively); flowers of maguey (century plant), garambullo (a myrtilocactus) and yuca (yucca); verdolagas (purslane); quelites (pigweed); xocoyoll (wood or sheep sorrel); flor y hojas de nabo (flower and leaves of a variety of wild mustard); lengua de vaca (a variety of dock), and endivia (sow thistle). Fruits, except for those of several of the cacti are almost never eaten. Fresh vegetables, aside from the readily available greens and flowers above mentioned, are rarely consumed.

Many foods of considerable importance in the diets in other parts of Mexico are infrequently used in this region, probably for economic reasons. These include most fruits and vegetables, bread and other wheat or other grain products, rice, coffee, sugar, "pastas" (various flours and pastes), lentils, peas, broad beans, and peanuts.

Cooking is usually rather simple and consists chiefly in making tortillas and cooking beans. The various greens are generally boiled but not excessively, and are eaten in large quantities. Most people eat only two meals a day. The main meal is almost invariably in the mid-afternoon. The morning and evening meals, the latter being entirely omitted in the majority of instances, generally consist of holdovers from the main meal.

Children are breast fed to an advanced age, sometimes several years, and it was not unusual for a woman to have several children nursing at the same time. In fact, being either pregnant or lactating was the common status of women of childbearing age. The dietary records of children whose histories showed them still to be nursing to any considerable extent were excluded from the tabulations.

Pulque is drunk almost universally, often in extremely large quantities. With many persons it entirely takes the place of water. Popularly it is believed to be very nutritious, many of the men saying they are unable to work without it and that it serves as a substitute for meat in the diet. The consumption even by babies and small children was considerable (Table 3).

Pulque is produced by fermentation of the juice of the maguey. Eight to ten years after transplanting, just before the plant is ready to put out the central flower-bearing stalk, this central part is removed, leaving a cup-shaped receptacle. Into this cup juice from the leaves drains and is removed daily with a large pipette made from an elongated gourd. The sides of the cup must be scraped daily in order to keep the flow going. The leaves have stored up a great deal of sugar (chiefly sucrose) for the needs of the rapidly growing flowering stalk, and the juice produced is therefore quite sweet and is known as agua miel (honey water). This agua miel is inoculated with a culture from a previous batch of pulque and allowed to ferment for a variable time, usually about 10 to 12 days. After it reaches the optimum point it should be drunk within 24 to 48 hours, since the fermenting organisms are not removed and the fermentation proceeds unchecked, causing it to spoil. The presence of the fermenting organisms gives pulque a whitish, turbid appearance. It is mildly acid and not particularly unpleasant to the taste. It is usually produced under very unhygienic conditions, but its acidity probably prevents it from being a good culture for pathogenic organisms.

Because the organisms which cause the fermentation are not removed they contribute some vitamin B and protein to the drink, and the vitamin C content is considerable. The average consump-

TABLE 2

Principal Sources of Chief Nutrients *

(From 100 seven day diet records selected according to age and sex distribution of group studied)

Calories		*Total Protein*		*Animal Protein (av. 4.8 per cent of total protein)*		*Carbohydrate*		*Fat*		*Vitamin A*	
	Per cent		*Per cent*		*Per cent*		*Per cent*		*Per cent*		*Per cent*
Tortillas	77	Tortillas	73	Goat & sheep	28	Tortillas	85	Tortillas	79	Greens	52
Pulque †	12	Beans	8	Pork	15	Beans	5	Meats	6	Chile	33
Beans	5	Pulque	6	Fish (dried)	13	Chile	2	Lard	4	Tortillas	5
Greens, vegetables and fruits	2	Greens	5	Beef	12	Greens, vegetables and fruits	1	Greens, vegetables and fruits	2	Fruits and vegetables	2
		Meats	2	Blood (goat and sheep)	12			Beans	1		
		Fruits and vegetables	1	Chicken and rabbit	11						
				Eggs & milk	3						

Thiamin		*Riboflavin*		*Niacin*		*Vitamin C*		*Calcium*		*Iron*	
	Per cent		*Per cent*		*Per cent*		*Per cent*		*Per cent*		*Per cent*
Tortillas	74	Tortillas	48	Tortillas	55	Pulque	48	Tortillas	69	Tortillas	51
Pulque	10	Pulque	24	Pulque	23	Greens	32	Pulque	8	Pulque	20
Beans	7	Greens	9	Chile	5	Fruits and vegetables	7	Greens	9	Greens	14
Fruits, greens and vegetables	4	Beans	5	Greens, vegetables and fruits	4	Chile	4	Beans	3	Other vegetables	4
Meat	2	Chile	1	Meats	2			Other vegetables	2	Meats	1
		Vegetagles and fruits	1								
		Meat	1								

* The relative importance of the foods varied little with age except for pulque, the consumption of which increased gradually to a maximum in adult males.

† Calculated on the basis of alcohol and protein content. The contribution of pulque to total calories is probably a little greater since it may contain other caloric substances.

tion for adults in our dietary records was 1 to 2 liters a day and this is probably low, since it is difficult to get an accurate report on a substance drunk abundantly at odd times. It was not unusual for a man to drink as much as 10 liters in a day. The alcohol content of pulque is low (3 to 5 per cent) but, in spite of this, obvious drunkenness was quite common, particularly on market and fiesta days.

The relative importance of pulque as well as of other major foods may be seen in Table 2, prepared from an analysis of 100 diet records, selected according to the population, age, and sex distribution in the villages surveyed. The percentages are based on principal food sources of each nutrient. It is apparent that tortillas are by far the most important single food in the diet, with pulque second. This does not mean that pulque has a high nutrient content or is to be particularly recommended as a source of any of these nutrients, but in view of the otherwise marginal character of the diet, it becomes important, particularly for its contribution of vitamin C.

RESULTS

The dietary tables give the intakes of the people by age and sex and a comparison with the recommended allowances of the National Research Council.* In the case of adults, those

* Recommended Dietary Allowances Revised, 1945. *Reprint and Circular Series, Number 122*, August, 1945, National Research Council, Washington, D. C. Since these 1945 values show some reductions, particularly those for members of the B complex, the calculations of per cents of recommended allowances in this study cannot be directly compared with similar calculations based on the older recommendations in other studies.

TABLE 3

Caloric Intake

	Both Sexes				*Males*				*Females*				*Entire Group*
Age	*1–3*	*4–6*	*7–9*	*10–12*	*13–15*	*16–20*	*21–50*	*50+*	*13–15*	*16–20*	*21–50*	*50+*	
No. persons	62	102	87	72	25	35	147	43	22	39	169	53	856
Mean calories daily	952	1,121	1,273	1,518	1,645	2,098	2,454	2,144	1,533	1,818	1,831	1,614	1,706
Standard error of the mean	39	36	47	61	100	139	63	126	92	97	45	59	26
Intake recommended by the National Research Council	1,200	1,600	2,000	2,500	3,200	3,800	3,000	3,000	2,600	2,400	2,500	2,500	2,430
Per cent of recommended intake	79	70	64	61	51	55	82	71	59	76	73	65	70
Av. cal./24 hrs. divided by basal calories	1.59	1.84	1.28	1.30	1.29	1.45	1.69	1.58	1.22	1.50	1.51	1.44	1.53
Per cent calories from carbohydrate	73	74	73	72	70	68	63	66	71	69	66	67	69
Per cent calories from fat	12.7	11.7	11.8	12.1	11.8	10.7	10.0	9.9	11.4	11.7	10.5	10.9	11.1
Per cent calories from protein	12.2	11.9	12.3	12.2	12.4	11.9	11.7	11.6	12.1	12.2	11.9	12.0	12.0
Per cent calories from alcohol of pulque (entire group)	1.9	2.2	3.1	3.4	6.1	9.2	14.8	12.9	5.4	6.6	11.1	10.4	8.0
Per cent calories from alcohol (drinker's only)	3.6	3.3	4.6	5.5	8.0	10.1	15.7	13.3	6.2	8.6	11.7	10.8	9.1

for a moderately active person are used. In taking these recommendations as a basis of comparison we do not suggest that they serve as a measure of malnutrition. Such was not the purpose for which they were made, and their admitted liberality allows for factors of safety, individual variations in requirements, and lack of accurate knowledge as to human needs.[8] They furnish a convenient basis for comparison and evaluation of observed dietary levels.

Table 3 presents the pertinent data with regard to calories. For persons of all ages the caloric intake averages 70 per cent of that recommended. These intakes are lower than those found in a similar study in Mexico City,[9] but approximate those found in certain regions of the United States. Youmans, Patton, and Kern[10] found an average for all age groups of 2,015 for white and 1,519 for colored in rural Tennessee, and Milam and Anderson,[11] 1,833 for white and 1,598 for colored in rural North Carolina, which approximate our mean of 1,706.*

The average ratio of calories per 24 hours to basal calories calculated from height and weight, shows a considerable margin over the basal needs, although in certain age groups, particularly adolescents, the margin appears rather small. A somewhat similar situation was encountered both in Mexico City[9] and in rural Tennessee.[10] Actually this margin may be larger than appears, since the Aub-DuBois standards from which the basal requirements were calculated are often considered to be 5 to 10 per cent too high even for a United States population. Otomi

* The use of the Atwater system of calculating caloric values, determined for mixed diets in the United States may introduce some error when applied to a rather monotonous diet derived almost entirely from plant sources, such as is eaten by these people. An attempt to apply more specific caloric values to the various foodstuffs resulted in differences which could hardly be considered significant. This error would appear to be less than several others inherent in the recording and calculating of dietary intakes.

TABLE 4

Relation of Weights to United States Averages

	Both Sexes					Males			Females			
Age	*1–3*	*4–6*	*7–9*	*10-12*	*13–15*	*16–20*	*21–50*	*50+*	*16–20*	*21–50*	*50+*	*Entire Group*
No persons conforming to United States data *	101	104	92	71	48	35	147	19	34	138	17	806
Observed average weight (kilos)	9.5	14.9	19.4	27.3	36.3	50.0	56.6	55.6	47.4	48.8	46.6	35.0
Theoretical weight (kilos)	10.7	15.8	21.8	28.3	36.6	50.9	61.6	64.2	47.8	54.5	58.1	38.0
Ratio of observed to theoretical weight	0.89	0.94	0.89	0.96	0.99	0.98	0.92	0.87	0.99	0.90	0.80	0.92
More than 10 per cent underweight:												
No.	53	34	19	12	7	8	56	13	5	70	13	290
Per cent	53	33	21	17	15	23	38	68	15	51	76	36
More than 10 per cent overweight:												
No.	1	3	5	0	5	2	3	2	4	2	0	27
Per cent	1	3	5	0	10	6	2	10.5	12	1.5	0	3.3
No. persons to whom United States tables not applicable due to small stature, etc.												
No.	7	3	1	1	0	1	6	17	14	45	47	142
Per cent	7	3	1	1	0	3	4	47	29	25	73	15

* Tables of Woodbury; and of Baldwin and Wood

TABLE 5

Protein Intake

	Both Sexes				Males				Females				
Age	*1–3*	*4–6*	*7–9*	*10–12*	*13–15*	*16–20*	*21–50*	*50+*	*13–15*	*16–20*	*21–50*	*50+*	*Entire Group*
No. persons	62	102	87	72	25	35	147	43	22	39	169	53	856
Mean grams of protein daily	28.6	33.8	37.8	45.4	55.8	61.9	71.8	62.2	47.1	56.6	54.9	49.1	51.0
Standard error of the mean	1.2	1.2	1.4	1.9	3.0	4.4	1.9	3.5	2.7	2.8	1.6	2.0	0.77
Intake recommended by the National Research Council (gm.)	40	50	60	70	85	100	70	70	80	75	60	60	64.0
Per cent of recommended intake	72	68	63	65	66	62	102	89	59	75	92	82	80
Per cent persons with intake below that recommended	85.5	88.2	92.0	87.5	100.0	94.3	46.9	60.5	100.0	84.6	71.0	77.4	76.5
Per cent Persons with intake below 50 per cent of that recommended	16.1	19.6	26.4	27.8	24.0	42.9	0.7	4.7	36.4	25.6	2.4	3.8	14.1
Per cent of animal protein eaten	6.4	3.4	5.2	5.6	6.9	4.2	4.6	2.6	5.5	6.6	4.6	5.2	4.8
Per cent persons eating no animal protein	58	51	42	33	56	40	44	47	36	41	46	56	46
Per cent persons eating less than 5 per cent animal protein	63	66	72	60	57	73	64	83	52	56	66	71	66

Indians appear to be short and lean but usually not extremely thin.

Table 4 compares the relative weights of these people by age and sex with United States standards, which were found to be in general agreement with the measurements for a group of individuals in Mexico City.[9] Whether they are applicable to these Indians is doubtful. Many persons, particularly adult women, were of such a body type, usually due to their small stature, that the tables could not be applied at all, and their exclusion probably modifies the averages. It can be stated, however, that a large percentage, particularly among children, was underweight by United States standards.

Table 3 also gives the percentages of calories derived from carbohydrate, fat, protein, and alcohol. It will be seen that the diet is a relatively high carbohydrate, low fat and protein one. Particularly striking are the percentages of calories from alcohol, practically all from pulque. The last two lines give these figures for the entire group and for those whose records showed they drank significant quantities in the week of the record. There is only a 1 per cent (8.0 per cent as compared with 9.1 per cent) difference between the consumption of these two groups. Even among babies the consumption is significant. The top figure of 14.8 per cent in adult males expresses only the average and in individual instances it was sometimes doubled, or more.

Table 5 shows that the average total protein intake was 80 per cent of that recommended. This should be adequate if considered quantitatively only, but the situation qualitatively is not good. An average of only 4.8 per cent was from animal sources, while 46 per cent of the persons ate no animal protein whatever and 66 per cent ate less than 5 per cent. Also it will be seen that in spite of the fairly good average a considerable percentage, especially in the younger age groups, ate quantitatively less than 50 per cent of the recommended allowances.

Table 6 gives the data on blood proteins. The biuret instead of the Kjeldahl method was used because of the saving in time. Although somewhat less reliable for general use, the biuret method appears suitable for the study of protein deficiency in population

TABLE 6

Blood Serum Proteins

	Both Sexes		*Males*		*Females*			
Age	*1–9*	*10–15*	*16–50*	*50+*	*16–50*	*50+*	*Lactating and Pregnant*	*Entire Group*
No. persons	200	117	187	36	139	63	89	831
Total proteins gm./100 ml.	7.39	7.38	7.61	7.38	7.43	7.44	7.21	7.43
Standard error of the mean	0.047	0.067	0.055	0.13	0.076	0.12	0.078	0.027
Per cent below 6.5 gm.	7.0	7.7	5.9	10.1	12.2	12.7	16.9	9.4
Per cent below 6 gm.	2.5	5.1	3.7	0	7.9	7.9	5.6	4.7
Albumin gm./100 ml.	4.99	4.93	4.81	4.23	4.75	4.39	4.62	4.78
Standard error of the mean	0.038	0.055	0.049	0.13	0.056	0.092	0.064	0.023
Per cent below 4.0 gm.	5.0	6.0	9.1	38.9	10	25.4	13.5	11
Per cent below 3.5 gm.	2.0	4.3	3.7	11.1	5.7	11.1	4.5	4.7

groups [12]; and in general the values compare favorably with those of other surveys.[9, 11, 12] * Approximately 10 per cent may be considered as having low protein values (total protein below 6.5 mg., albumin below 4.0 gm.), but the deficiency was rarely severe, nor is it particularly marked in the lactating and pregnant women, where a deficiency would most likely be evident. The poorest groups are those of persons over 50 years of age. Nearly 40 per cent of the males over 50 had albumin values below 4 gm. Only 14 adults showed clinical evidence of mild edema. Of these, 6 had blood proteins sufficiently low to have been a major factor in causation of the edema (average total protein 5.1 gm., and albumin 2.6 gm.). The edema in the others must be ascribed to other causes. From the standpoints of total protein intake, blood proteins, and clinical examination, the protein nutrition of these people was fairly good.

The major source of protein was tortillas, with beans and pulque of less importance (Table 2). Among vegetable proteins, corn protein (if the germ is included as in preparing tortillas [13]) and bean protein may be considered of rather good biological value. The protein content of pulque was calculated from its nitrogen content; but it is possible that pulque contains other nitrogen-containing compounds in addition to protein, and therefore the assigned value may be somewhat high. It is known that the protein of some yeasts is deficient in sulfur-containing amino acids,[14] but whether this deficiency exists in pulque proteins remains to be determined.

It is possible that a deficiency in the quality and quantity of protein may have adversely affected the growth of these people without significantly lowering the blood proteins. This is known to occur in experimental animals.[15] As judged by United States standards growth was poor, the developmental ages lagging two to three years behind those for the United States.[16]

Table 7 presents the vitamin A intake. This nutrient was nearly all in the form of provitamin A (carotene) and the in-

TABLE 7

Vitamin A Intake

	Both Sexes				*Males*				*Females*				
Age	*1–3*	*4–6*	*7–9*	*10–12*	*13–15*	*16–20*	*21–50*	*50+*	*13–15*	*16–20*	*21–50*	*50+*	*Entire Group*
No. persons	62	102	87	72	25	35	147	43	22	39	169	53	856
Mean daily intake (I. U.)	3,799	4,332	4,595	5,035	5,170	5,556	6,897	5,634	4,773	5,699	6,218	5,821	5,498
Standard error of the mean	310	272	341	324	524	511	418	540	517	471	374	531	138
Intake recommended by National Research Council	2,000	2,500	3,500	4,500	5,000	6,000	5,000	5,000	5,000	5,000	5,000	5,000	4,331
Per cent of recommended intake	190	173	131	112	103	93	138	113	95	114	124	116	127
Per cent of persons with intake below that recommended	25	30	48	57	56	68	39	46	59	49	49	53	45
Per cent of persons with intake below 50 per cent of that recommended	6	6	17	11	12	20	14	26	9	9	16	11	13

* Hurtado, et al.[23] observed a moderate but definite increase in serum proteins within three hours after arrival at high altitude. The chronic effects of altitude must be determined before these protein values can be compared with those elsewhere.

TABLE 8

Blood Vitamin A and Carotene

	Both Sexes				*Males*				*Females*				
Age	*1–3*	*4–6*	*7–9*	*10–12*	*13–15*	*16–20*	*21–50*	*50+*	*16–20*	*21–50*	*50+*	*Lactating and Pregnant*	*Entire Group*
No. persons	22	78	86	70	45	34	150	36	24	111	63	90	809
Mean serum vitamin A (I. U.)	73	69	78	87	91	111	126	87	102	105	102	105	98
Standard error of the mean	7.4	2.8	3.6	4.6	3.4	5.4	3.4	6.8	13.0	3.6	5.3	4.2	1.4
Per cent below 70 I. U.	59	51	44	27	20	6	9	36	21	17	22	21	25
Per cent below 50 I. U.	27	27	17	7	2	3	2	19	4	12	12	4	10
Per cent below 30 I. U.	4.5	1.3	2.3	1.4	0	0	0.7	8.3	0	2.7	1.6	1.1	1.7
Mean serum carotene (micrograms)	136	158	156	149	138	82	80	64	132	120	118	136	122
Standard error of the mean	19.0	7.9	6.9	7.7	9.8	9.1	3.8	5.8	10.0	6.1	8.5	7.5	2.4

take apparently was adequate, since it averaged 127 per cent of that recommended. However, it is recognized that the requirement may be increased if met chiefly as carotene rather than true vitamin A. Also, at least 13 per cent of persons ate less than 50 per cent of the recommended allowance.

Table 8 gives the blood values for vitamin A and carotene. In general the vitamin A values correspond to those encountered elsewhere, rising gradually from childhood to adult life.[9, 11, 17] The percentage lying below 70 I.U., was 25, but we believe this is a high limit, particularly for children, among whom 50 I.U. seems a more satisfactory minimum. The proportion of persons with levels

TABLE 9

Thiamin Intake

	Both Sexes				*Males*				*Females*				*Entire Group*
Age	*1–3*	*4–6*	*7–9*	*10–12*	*13–15*	*16–20*	*21–50*	*50+*	*13–15*	*16–20*	*21–50*	*50+*	
No. persons	62	102	87	72	25	35	147	43	22	39	169	53	856
Mean daily thiamin intake (mg.)	0.86	1.0	1.2	1.4	1.7	2.0	2.4	2.0	1.6	1.7	1.7	1.5	1.61
Standard error of the mean	0.035	0.035	0.051	0.060	0.086	0.145	0.073	0.114	0.153	0.090	0.048	0.069	0.027
Intake recommended by National Research Council	0.6	0.8	1.0	1.2	1.5	1.8	1.5	1.5	1.3	1.2	1.2	1.2	1.19
Per cent of recommended intake	143	125	120	117	113	111	160	133	123	142	142	125	135
Per cent persons with intake below that recommended	8	23	21	42	32	49	14	23	41	18	14	28	22
Per cent persons with intake below 50 per cent of that recommended	0	1.0	0	0	0	0	0	0	0	0	0	0	0.1
Mg. thiamin per 1,000 calories	0.90	0.89	0.94	0.92	1.03	0.95	0.98	0.93	1.04	0.94	0.93	0.93	0.94

below 30 I.U. is included, since classical vitamin A deficiency disease is usually not encountered above this level.[18]

Physical signs of vitamin A deficiency were few and indefinite. Dry skins were the rule, but this condition could be attributed to hygienic and physical factors. Twenty persons with dry hyperkeratotic skin, possibly of nutritional origin, were encountered, but on the average neither their vitamin A intake nor blood levels were low. No classic signs such as true Bitot spots were found. The incidence of conjunctival changes was high (Table 18), but these may not be an expression of vitamin A deficiency, and, as previously found, no correlation was evident between these changes and dietary or blood levels.[19]

Thiamin intake as presented in Table 9 indicates that consumption was adequate even for this high carbohydrate diet. At all ages the average equaled or exceeded the recommended allowance, and only one person received less than 50 per cent. Also the milligrams of thiamin per 1,000 calories was well above the value often recommended of 0.5–0.6 mg.,[20] and was far removed from a commonly given danger zone of approximately 0.2 mg. per 1,000 calories.

No clinical cases of thiamin deficiency were encountered. There was a high incidence of symptoms occasionally attributed to this deficiency, and calf tenderness was rather common (Table 19). However, it is doubtful whether these symptoms or signs in themselves constitute evidence of thiamin deficiency, and in a population group of the intellectual level of this one they are particularly difficult to evaluate. There were no cases of definite peripheral neuritis.

In Table 10 it may be noted that the riboflavin intake was definitely low, averaging 41 per cent of the recommended allowance, with 98 per cent of persons taking less than that recommended, and 69 per cent less than 50 per cent of that recommended. The average milligrams of riboflavin per 1,000 calories lies only a little above a value which was found to produce gradual depletion of body stores,[21] and

TABLE 10

Riboflavin Intake

	Both Sexes				*Males*				*Females*				
Age	*1–3*	*4–6*	*7–9*	*10–12*	*13–15*	*16–20*	*21–50*	*50+*	*13–15*	*16–20*	*21–50*	*50+*	*Entire Group*
No. persons	62	102	87	72	25	35	147	43	22	39	169	53	856
Mean daily riboflavin intake (mg.)	0.35	0.40	0.48	0.57	0.67	0.89	1.10	0.89	0.63	0.73	0.71	0.72	0.69
Standard error of the mean	0.025	0.015	0.023	0.025	0.045	0.078	0.042	0.058	0.051	0.054	0.029	0.045	0.017
Intake recommended by National Research Council	0.9	1.2	1.5	1.8	2.0	2.5	2.0	2.0	2.0	1.8	1.6	1.6	1.66
Per cent of recommended intake	39	33	32	32	34	36	55	45	32	41	44	45	41
Per cent persons with intake below that recommended	100	100	99	100	100	100	95	100	100	97	96	94	98
Per cent persons with intake below 50 per cent of that recommended	76	85	95	93	84	80	45	60	86	69	50	62	69
Mg. riboflavin per 1,000 calories	0.368	0.357	0.377	0.375	0.407	0.424	0.448	0.415	0.411	0.401	0.388	0.446	0.404

TABLE 11

Niacin Intake

	Both Sexes				Males				Females				Entire
Age	*1–3*	*4–6*	*7–9*	*10–12*	*13–15*	*16–20*	*21–50*	*50+*	*13–15*	*16–20*	*21–50*	*50+*	*Group*
No. persons	62	102	87	72	25	35	147	43	22	39	169	53	856
Mean daily niacin intake (mg.)	4.6	5.2	6.0	7.7	9.4	11.7	14.2	12.4	8.0	9.9	10.7	9.3	9.4
Standard error of the mean	0.28	0.20	0.23	0.39	0.67	0.92	0.56	0.80	0.59	0.70	0.36	0.46	0.19
Intake recommended by National Research Council	6	8	10	12	15	18	15	15	13	12	12	12	11.9
Per cent of recommended intake	77	65	60	64	63	65	95	83	62	83	89	78	79
Per cent persons with intake below that recommended	74	87	97	89	92	91	54	72	91	69	68	79	76
Per cent persons with intake below 50 per cent of that recommended	19	29	35	36	32	40	9	19	32	21	12	17	22

intakes were considerably below this average.

The analyses of Mexican foods has indicated that riboflavin deficiency might be expected,[1] and this is supported by the clinical finding of a large amount of angular cheilosis and glossitis (Tables 18 and 19). The incidence of corneal invasion was 42 per cent (Table 18). This is less than that encountered in whites, but greater than that in Negroes, in the United States, where the riboflavin intake was considerably higher.[11, 19] The possible effect of race precludes evaluation of the incidence of corneal invasion in these Indians, but no correlation was evident between riboflavin intake and corneal invasion or other signs suggestive of riboflavin deficiency.

The niacin intake (Table 11) was low, as judged by the recommended

TABLE 12

Vitamin C Intake

	Both Sexes				Males				Females				Entire
Age	*1–3*	*4–6*	*7–9*	*10–12*	*13–15*	*16–20*	*21–50*	*50+*	*13–15*	*16–20*	*21–50*	*50+*	*Group*
No. persons	62	102	87	72	25	35	147	43	22	39	169	53	856
Mean daily vitamin C intake (mg.)	39.9	41.8	44.8	61.7	74.2	101.6	176.8	144.1	71.4	80.9	116.5	101.2	96.3
Standard error of the mean	4.0	3.0	3.4	5.2	9.1	11.4	8.4	12.5	9.3	8.9	5.2	5.7	2.7
Intake recommended by National Research Council	35	50	60	75	90	100	75	75	80	80	70	70	68.1
Per cent of recommended intake	114	84	75	82	82	102	236	192	89	101	166	145	141
Per cent persons with intake below that recommended	52	70	75	36	68	51	14	12	64	54	21	23	40
Per cent persons with intake below 50 per cent of that recommended	27	33	41	15	36	23	3	0	23	23	4	8	17

TABLE 13

Blood Vitamin C

Age	Both Sexes		Males	Females		Entire Group
	1–9	10–15	16 Yrs. and Over	16 Yrs. and Over	Pregnant and Lactating	
No. persons	205	118	223	203	90	839
Mean blood vitamin C (mg./100 ml.)	1.16	1.28	1.18	1.22	1.14	1.19
Standard error of the mean	0.029	0.033	0.030	0.027	0.039	0.014
Per cent below 0.6 mg.	9.7	4.3	13.9	7.4	4.4	8.9
Per cent below 0.3 mg.	1.9	0.8	2.2	1.5	1.1	1.6

allowances, but it was well above that usually producing pellagra. The situation is complicated here by the fact that tortillas made from corn furnished about three-fourths of the calories, and it is possible that under these conditions the niacin intake may represent a deficiency. Clinically, no classical pellagra was encountered, although dryness and cracking of the skin of the feet and shins was common. The incidence of glossitis was high (Table 18), and niacin as well as riboflavin deficiency may well have been a factor in its production.

Vitamin C intake may be characterized as good (Table 12), averaging 142 per cent of the recommended allowance. In no group did it drop below 75 per cent, which is almost certainly adequate. The very high intake among adults was due to their large pulque consumption. The blood levels (Table 13) are in accord with the vitamin C intakes, averaging well over 1 mg. for all age groups, with a relatively small percentage lying below 0.6 mg., and only 1.6 per cent lying below 0.3 mg. Only two zero values were encountered in the entire study, one in a person who drank no pulque, the other in a person with active malaria. This is in marked contrast to several studies made in the United States where zero values were common.[11, 12]

Physical examination revealed no cases that were believed to be scurvy. However, in spite of the relatively high vitamin C intakes and blood values, red, swollen, spongy gums were extremely common.

The incidence and grading of gingivitis by slit lamp is given in Table 18 and as judged by the dental examination in Table 20. It is believed that this high incidence must be ascribed to poor dental hygiene rather than to any vitamin C deficiency. Tooth brushes or dental care were practically nonexistent. No correlation was found between gin-

TABLE 14

Hematologic Findings

Age	Both Sexes		Males	Females		Entire Group
	1–9	10–15	16 Yrs. and Over	16 Yrs. and Over	Pregnant and Lactating	
No. persons	214	118	223	205	92	852
Mean hemoglobin gm./100 ml.	13.2	14.2	15.5	13.8	13.7	14.1
Standard error of the mean	0.036	0.051	0.036	0.031	0.045	0.014
Per cent below 12 gm.	10.3	5.1	1.8	2.4	4.3	4.8
Per cent below 10 gm.	2.3	3.4	0.4	1.0	1.1	1.5
Mean red blood cells (in millions)	4.30	4.51	4.81	4.57	4.47	4.55
Standard error of the mean	0.027	0.033	0.029	0.022	0.035	0.015
Mean hematocrit	39	41	45	42	41	42
Standard error of the mean	0.25	0.34	0.26	0.19	0.33	0.14

givitis and dietary or blood vitamin C levels.

Table 14 indicates that the hematologic values are good as compared with the usual United States findings; but the situation is complicated by the altitude, and no extensive study at a similar altitude is available for comparison. It is apparent that any appreciable amount of anemia was rare. It should be mentioned that hookworm is not a complicating factor in this region. The average values for lactating and pregnant women were not significantly lower than those for other women, suggesting that the intake of hemoglobin-forming material, particularly iron, was sufficient to support the extra strain of pregnancy. Calculation of the mean corpuscular volume and mean corpuscular hemoglobin from these data shows a moderate increase over the usual values. This may possibly be ascribed to altitude and is in accord with several other studies.[9, 23, 24] Records of iron intake (Table 15) support the hematologic data. For persons in each age group the consumption was far above that recommended, and the incidence of low intakes was small.

The calcium and phosphorus intakes (Table 16) are chiefly accounted for by the consumption of tortillas. The average calcium intake is rather good, 85 per cent of that recommended. However, in small children the average drops to 50 per cent of the recommended allowance and the incidence of low intakes is high. Nursing children, which means practically all through one year of age and often considerably beyond, are not included, as consumption could not be determined. Since the mothers' calcium intakes were as a rule adequate, those of nursing children probably were also. No cases of rickets or diseases attributable to calcium deficiency were encountered. The phosphorus intakes appeared to be fairly adequate and the calcium-phosphorus ratio seemed favorable, averaging 0.75, which is not far from the usually given optimum ratio of one. The calcium content of the well water (av. 43 mg./liter) probably contributed to the calcium requirement.

No attempt was made to measure the vitamin D intake. Because of the dryness of the region, clouds seldom interfere with exposure to the sun's rays and these people are outdoors a major por-

TABLE 15

Iron Intake

	Both Sexes				*Males*				*Females*				
Age	*1–3*	*4–6*	*7–9*	*10–12*	*13–15*	*16–20*	*21–50*	*50+*	*13–15*	*16–20*	*21–50*	*50+*	*Entire Group*
No. persons	62	102	87	72	25	35	147	43	22	39	169	53	856
Mean daily intake of iron (mg.)	12.5	12.9	14.2	18.7	20.7	28.3	36.3	30.3	19.5	23.6	26.4	22.6	23.2
Standard error of the mean	0.50	0.45	0.57	0.95	1.5	2.06	1.32	1.97	1.16	1.50	0.96	1.2	0.45
Intake recomended by National Research Council	7	8	10	12	15	15	12	12	15	15	12	12	11.4
Per cent of recommended intake	179	161	142	156	138	189	302	252	130	157	220	188	204
Per cent persons with intake below that recommended	19	15	20	18	16	8.6	2	2.3	18	15	4.7	3.8	10
Per cent persons with intake below 50 per cent of that recommended	4.8	0	1.1	0	0	0	0.7	0	0	2.6	0	0	0.7

TABLE 16

Calcium and Phosphorus Intakes

	Both Sexes				*Males*				*Females*				
Age	*1–3*	*4–6*	*7–9*	*10–12*	*13–15*	*16–20*	*21–50*	*50+*	*13–15*	*16–20*	*21–50*	*50+*	*Entire Group*
No. persons	62	102	87	72	25	35	147	43	22	39	169	53	856
Mean daily calcium intake (gm.)	0.49	0.51	0.61	0.72	0.81	1.08	1.14	1.00	0.76	0.88	0.90	0.78	0.82
Standard error of the mean	0.020	0.021	0.022	0.029	0.052	0.065	0.037	0.053	0.053	0.050	0.011	0.028	0.012
Intake recommended by National Research Council	1.0	1.0	1.0	1.2	1.4	1.4	0.8	0.8	1.3	1.0	0.8	0.8	0.96
Per cent of recommended intake	49	51	61	60	58	77	142	125	58	88	112	98	85
Per cent persons with intake below that recommended	92	96	93	92	100	80	12	28	100	54	32	47	59
Per cent persons with intake below 50 per cent of that recommended	42	29	22	21	24	11	2	2	36	5	1	4	14
Mean daily phosphorus intake	0.61	0.69	0.71	1.06	1.2	1.4	1.6	1.4	1.1	1.3	1.3	1.1	1.1
Standard error of the mean	0.033	0.029	0.036	0.045	0.076	0.078	0.051	0.086	0.059	0.066	0.035	0.038	0.017
Calcium-phosphorus ratio	0.80	0.74	0.86	0.68	0.68	0.77	0.71	0.71	0.69	0.68	0.69	0.71	0.75

tion of the time, often with rather meager clothing. A vitamin D deficiency is therefore extremely unlikely. All phosphatase determinations were within normal limits.

It is apparent that average vitamin A, thiamin, ascorbic acid, and iron intakes may be considered very good, since they exceeded the recommended values. Calcium was a little low but probably adequate. Protein, especially if considered qualitatively, calories, and niacin were moderately low, the last perhaps accentuated by the very high corn consumption. Riboflavin is the only nutrient which could be characterized as very definitely inadequate, sufficiently so to produce clinical signs.

TABLE 17

Summary of Average Intakes Observed, Compared with Recommended Intakes for Average Person

	Calories	*Protein (gm.)*	*Ca (gm.)*	*Fe (mg.)*	*Vitamin A (I.U.)*	*Thiamin (mg.)*	*Riboflavin (mg)*	*Niacin (mg.)*	*Ascorbic Acid (mg.)*
Recommended National Research Council intakes corrected for age and sex distribution of group studied	2,430	64.0	0.96	11.4	4,331	1.19	1.66	11.9	68.1
Average intake observed	1,706	51.0	0.82	23.2	5,498	1.61	0.69	9.4	96.3
Per cent of recommended intake	70	80	85	203	127	135	42	79	141

Line one of Table 17 contains the recommended allowances adjusted to the group surveyed, calculated by using the National Research Council values for the age and sex distribution of this study. Line two gives the average intakes actually found, and line three the per cent of the recommended allowances.

PHYSICAL FINDINGS

One important consideration in our choice of this area for a nutrition study was that it is one of the economically poorest in Mexico. Nevertheless, surprisingly little definite clinical nutritional deficiency was observed. The people were short and lean in type but not extremely thin. Probably the most striking feature of possible nutritional origin was the small size and underdevelopment of the children for their age. How much of this is a racial characteristic and how much is due to nutritional deficiency cannot be determined. In most instances the average intake of the various nutrients, as judged by the National Research Council recommendations, were lower among growing children. Malnutrition in a few children was evidenced by a marked thinness, retarded growth and development, paleness, etc., rather than by frank syndromes such as scurvy, pellagra, and rickets.

The skins of these people were almost invariably dry, scaly, and often hard and cracked, especially over the exposed areas with the degree of change increasing with age. It is doubtful whether this should be attributed to nutritional failure. The region is very dry, sunny, dusty, and windy. The people seldom bathe, are almost constantly louse infested, and their clothing often offers very poor protection against the elements. Under these conditions one would expect to find skin changes due to these physical agents. Also conjunctival changes including pingueculae seemed to appear earlier and to be more severe here than in certain other regions of Mexico that we have studied. However, these also may be attributed to physical effects of sun, wind, dryness, and dust rather than to vitamin A deficiency.

The most common clinical signs of probable deficiency were cheilosis and glossitis. The specificity of cheilosis as a sign of riboflavin, B-complex, or other nutritional deficiency has been questioned. It was found impossible to run a well controlled therapeutic experiment under the conditions of this study, owing to the lack of sufficient coöperation. In two of the villages we were able to induce 13 persons with rather severe angular cheilosis to take riboflavin (5 mg. t.i.d.) with reasonable regularity. Little improvement was evident for about two weeks, but at the end of from three to four weeks 5 persons were cured or markedly improved and 3 moderately so. Two of the moderately improved were then treated with B-complex, and 1 was cured and the other markedly improved. Three with little or no improvement were similarly treated and 2 were markedly, and 1 moderately, improved. It seems likely that all might have responded to riboflavin alone had it been possible to continue adequate therapy for a sufficient period of time. In spite of the fact that this cannot be considered as a crucial experiment we believe it suggests that the cheilosis found here was in the main a B-complex, and more specifically a riboflavin, deficiency. Seven of the 13 treated with riboflavin or B-complex showed a mild degree of corneal invasion also, and in 5 it was still present at the end of the treatment.

It is of interest that the incidence of cheilosis among those consuming considerable pulque (500 ml. or more daily) was 9 per cent as against 45 per cent in the others. An attempt to allow for the factor of age resulted in groups too small to be statistically significant, but the percentages do suggest that the vitamin B of pulque aided in preventing signs of B-complex deficiency such as cheilosis.

Glossitis of severe grade was also common. In this survey conditions did not appear favorable for treatment of a satisfactory group. However, in other regions we have since encountered

TABLE 18

Results of Slit Lamp Examination

Age (Years)	Corneal	Conjunctival Changes		Gingivitis		Glossitis	
	Per cent with Vascularization	Per cent of Total	Per cent with Marked Changes	Per cent of Total	Per cent with Marked Changes	Per cent of Total	Per cent with Marked Changes
4–9	30	75	6	62	6	65	12
10–15	46	77	15	69	13	78	26
16 and over (males)	48	97	75	89	43	97	45
16 and over (females)	36	97	77	85	49	96	57
Entire group	42	94	66	84	41	93	46

tongues of similar appearance which responded to therapy with B vitamins, particularly to the combined B-complex. We therefore believe that in the main the tongue changes encountered here were due to B-complex deficiency. The effects of trauma such as the eating of large quantities of very hot chili peppers may also be important.

Table 18 summarizes the slit lamp findings. Since a larger proportion of examinations were made of adults than

TABLE 19

Results of Physical Examinations, Clinical Histories, and Miscellaneous Laboratory Tests *

Physical Findings		
Individuals examined		966
Angular cheilosis (suggestive of riboflavin deficiency)		92
Dry skin		681
Hyperkeratosis		20
Edema (6 with low blood protein values)		14
Heart murmurs (all systolic)		46
Enlarged spleen		20
Palpable liver		20
Just palpable (9 in small children)		16
Liver at costal margin but with evident collateral circulation		1
Markedly enlarged liver (2 with ascites)		3
Pulmonary râles (3 probably tuberculosis)		11
Calf tenderness (approximately two-thirds in women)		155
Glossitis and gingivitis		See Tables 18 and 20
Clinical History		
Photophobia and/or burning of eyes		300
Hemeralopia		67
Painful or burning tongue		153
Bleeding gums		126
Gastrointestinal symptoms		92
Anorexia		47
Nausea or vomiting		37
Diarrhea		36
Parasthesias, cramps, muscle pains		374
Fatigue, debility, irritability		184
Palpitation		26
Gain in weight		170
Loss in weight		219
Laboratory Tests		
Positive serology (Klein & Kahn)	Entire group	12%
	Adult males	20%
Positive malaria smears (all plasmodium vivax)		8
Phosphatase and phosphorus determinations (children under 5 years)		52
Average phosphorus		5.0 mg.
Average phosphatase (maximum value 10.4)		5.6 units

* The results of the clinical history and certain of the physical findings, e.g., calf tenderness, must be evaluated in terms of the low intellectual level of these people, the presence in some instances of a language difficulty, and their not infrequent desire to receive medicine for a real or imagined illness. We attempted to minimize the effects of these factors but they undoubtedly influenced the results.

of children, the incidence of changes for the entire group is rather heavily weighted with adults. No attempt was made to group acute and chronic cases separately, but approximately 60 per cent of the cases of gingivitis and 94 per cent of glossitis cases were considered as predominantly chronic. It will be seen that except for corneal vascularization, age or factors associated therewith are contributory causes of these changes, since there is an increase in incidence among older persons. Consequently we are skeptical of the value of these slit lamp examinations, particularly those of the cornea, conjunctiva, and gums, as criteria of nutritional status, unless supported by other clinical evidence.[19]

Table 19 presents the incidences of certain clinical symptoms and signs possibly attributable to nutritional status. Whether many should be so considered in a large percentage of cases is, we believe, very doubtful.

Because of the extreme dryness of the region no transmission of malaria occurred in these villages, but occasionally persons worked in irrigated regions of the valley for a few days and returned with the disease. We were impressed by the relatively low incidence of hypertension in these Indians as compared with that in the United States. This was also observed among several groups composed chiefly of "mestizos" (mixed Indian and white blood) which we have studied. The incidence of heart murmurs, undoubtedly mostly functional, is also less than was observed in the United States.

These people had remarkably good teeth considering that they receive no dental care and practise no dental hygiene. The results of the dental examinations are presented in Table 20.*

TABLE 20

Results of Dental Examination

Age (Years)	*Number of Persons Examined*	*Per cent with Perfect Teeth*	*Per cent of Decayed, Missing, or Filled Teeth* [25]	*Per cent of Persons with Gingivitis*
Less than 2	14	100	0	0
2–6	123	81	2.0	1.6
7–11	97	65	3.9	36
12–15	64	69	3.1	45
16 and over (males)	107	48	8.0	83
16 and over (females)	182	39	8.7	85

To one accustomed to seeing the high incidence of dental decay present in most areas of the United States, the observation that nearly 50 per cent of adult males had perfect teeth, seems remarkable. Calculus formation in many of the mouths was extreme. The incidence of gingivitis grossly evident on dental examination was very high, while that of pyorrhea was low.

From a dietary standpoint the main factors thought to be important in tooth formation are met. The intakes of vitamins A and C, calcium, and phosphorus are relatively good, and there is plenty of solar radiation to take care of the vitamin D requirement. Although the diet is high in carbohydrate, chiefly due to tortillas, practically no sugars are eaten. There was no clinical evidence of fluorosis in these people. Chemical examination of the water from several of the wells showed 0.2 to 0.3 p.p.m. of fluorine. This is far below the optimum usually stated to be desirable for preventing caries.

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* The studies on the teeth were done in collaboration with Felix R. Leycegui, D.D.S. A more detailed account of the dental findings in this and other regions of Mexico will be reported separately.

SUMMARY

The results of a nutrition survey of Otomi Indians in the Mezquital Valley of Mexico are presented. The region is arid and barren and, economically and culturally, one of the most depressed of the country. The inhabitants eat very few of the foods which are commonly considered as essential to a good nutrition pattern. Their consumption of meat, dairy products, fruits, and vegetables is exceedingly low. However, through the eating of tortillas, the drinking of pulque (the fermented unfiltered juice of the century plant), and the eating of every conceivably edible plant available, a fairly good diet is maintained.

Pronounced clinical nutritional deficiency was uncommon. The only deficiency, evident both clinically and through dietary records, may be attributed to insufficient riboflavin. Because of the large corn consumption some niacin deficiency probably also existed. Protein, if considered qualitatively, and caloric intakes were moderately low. Intakes of vitamin A, thiamin, ascorbic acid, iron, calcium, and phosphorus were on the average good.

Clinically, angular cheilosis and glossitis were the major signs of deficiency encountered. Growth, by United States standards, was retarded, but it is impossible to evaluate the nutritional as distinct from the racial factors. The teeth were found to be excellent.

Blood studies, including hematological examination and determination of blood proteins and vitamins A and C, revealed values which in general compared favorably with those encountered elsewhere.

It appears that in spite of the barrenness and poverty of the region its inhabitants have through many centuries developed food habits and a way of life adapted thereto. Attempts at change would be a mistake until their economic and social conditions can be improved and something really better substituted.

ACKNOWLEDGMENT—The authors wish to acknowledge the coöperation and facilities afforded them by Dr. Francisco Miranda, Director of the Institute of Nutrition; Dr. Manuel B. Marquez Escobedo, Director of the Training Center of the School of Hygiene, and Dr. Angel de la Garza Brito, Director of the School of Hygiene. We are indebted to Sr. Leobardo B. Terpan for his assistance in certain phases of the field work and for his aid in the statistical calculations. We also wish to acknowledge the technical assistance of Srita. Mercedes Prieto López and Srita. Consuela Sánchez Mesa in the laboratory, and of Srita. Antonia Montaño S., Sra. Mercedes Magaña Vda. de Galindo, Srita. Ausencia Lutrillo Rojas, and Srita. Ofelia Carrasco, who at various times aided in taking the diet records.

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Proposed Report on the Educational Qualifications of Health Officers*†

I. General Scope of the Field

A. *Specific Contribution to Public Health by Workers in this Field*

It has long been established that public health is a concern of government and the necessity for an official designated by law as health officer is universally recognized. Past accomplishment of the health officer and his associates as measured by the prevention of sickness and death and the prolongation of life is a matter of common knowledge. As progress has been made in certain fields of preventive medicine, other and more complex problems have come into prominence, such as accident prevention, the prevention or amelioration of the chronic and degenerative diseases, and the maintenance of optimum health. Scientific discoveries of wide practical application have been rapid in the past few decades and the demand for public services for the prevention and cure of disease has become greater and in all probability will so continue. Opportunities for challenging and constructive service in the field of public health have developed rapidly and the needs for specific education and training have increased accordingly.

The health officer's responsibilities vary considerably in different public health organizations, but in general he has administrative responsibility for all activities of the official health agency operating in the area and directs the staff promoting those activities.

The provision of medical care, or the administration of a medical care program in certain special fields or as an emergency activity, has with increasing frequency been accepted as a responsibility of official health agencies. The medical treatment of a large proportion of persons suffering from the venereal diseases, tuberculosis, and certain of the acute infectious diseases has for some time been directly or indirectly the responsibility of health departments, as has a medical and surgical treatment program for the physically handicapped in many communities. Partial responsibility for the treatment of cancer and other chronic diseases is sometimes assumed by the health department, and during recent years as an "emergency" measure, the administration of medical services for the wives of certain members of the armed forces, and general pediatric care for this segment of the population, have been undertaken by the official health agencies. There are indications that the health officer's responsibilities in the field of medical care may be increased rather than decreased in the future.

B. *Future Outlook*

It is generally recognized that there should be coverage of every population and area unit of our nation with competent, full-time local health service. Both the American Public Health As-

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* The Committee on Professional Education of the American Public Health Association publishes this report before transmittal to the Governing Council in order to permit the members and Fellows of the Association to review it and to offer criticisms and suggestions in the further consideration of the report. Suggestions should be mailed promptly to the Committee on Professional Education, A.P.H.A., 1790 Broadway, New York 19, N. Y.

This report, like all other statements of the committee on professional and technical qualifications in public health, is subject to periodic revision in order that it may be kept abreast of the best thought.

† This proposed report is a revision of the Report on the Educational Qualifications of Health Officers approved by the Governing Council on October 18, 1939.

sociation and the American Medical Association have declared in official pronouncements their interest in the complete coverage of the United States by local units of health jurisdiction, and continued efforts in this direction are to be expected in the future. Between 1915 and 1935, the number of counties in the United States with full-time local health services increased from 14 to 762. Passage of the Social Security Act in 1935 stimulated and accelerated this development, so that there are now over 1,800 counties that receive full-time health service. A third of the population, however, is still without the services of a full-time local health officer.

Local communities in the United States are now being served by approximately 1,100 full-time health officers and 1,800 other full-time administrators. Of this number over 90 per cent hold the degree of Doctor of Medicine and 20 per cent hold this degree and in addition have a postgraduate degree in public health. The majority of full-time local health officers are employed by cities, counties, and combinations thereof. In some states, district health officers on the staffs of state departments of health are assigned to local areas and render direct service. A large number of individuals qualified as health officers are employed by federal and state agencies and by voluntary organizations. The establishment of new subdivisions within health departments to provide service in the fields previously neglected by the official agencies, such as accident prevention, cancer control, general nutrition, and industrial hygiene, gives reason to believe that the future will show expansion into new fields as well as an intensification of the existing activities of the health agency.

II. Functions of Health Officers

Many functions of the health officer are defined by statute, such as his power to enforce sanitary laws and regulations, his responsibility for the preparation of budgets and the proper expenditure of funds. He has also the important functions of interpreting public health activities to governing bodies, coördinating the activities of official and voluntary agencies, performing the duties of a public office and of assuming a position of leadership in the community in all matters pertaining to health. Besides administrative duties and exercising leadership in his field, the health officer takes part in specific activities for disease prevention and control, using technical procedures that call for a high degree of medical and sanitary knowledge. In larger organizations the health officer may not personally render direct service but directs and evaluates the work of his subordinates and must be able to exercise both technical skill and professional judgment in so doing. The health officer's position is such that he may have broad opportunity for special studies and research in public health. In smaller localities he may perform all or numerous medical and other professional functions himself. In general, the health officer must have some training and assume some responsibility for the proper development of the official agency's activities in the following fields:

1. Environmental sanitation including water, milk, and food sanitation, insect and rodent control, and nuisance abatement
2. Acute communicable disease control
3. Tuberculosis control
4. Venereal disease control
5. Child hygiene
6. School hygiene
7. Dental Hygiene
8. Maternal hygiene
9. Public health laboratory service
10. Vital statistics
11. Public health nursing
12. Public health education
13. Industrial hygiene
14. Nutrition
15. The chronic or degenerative diseases
16. Mental hygiene

17. Accident prevention
18. Medical care administration
19. Audit and Accounts
20. Personnel management and training
21. Hospital administration

A. *Lines of promotion*

In large local jurisdictions and in federal and state agencies there are numerous subordinate positions, such as those of deputy and assistant health officer. Several grades of positions with administrative duties are provided, and there are definite lines of promotion. The health officer showing ability may progress from the administration of small official health units to positions of responsibility in larger organizations or larger areas, or he may advance from a subordinate position such as an assistant health officer to full responsibility for the direction of a department, agency, or district. In general, a classification of health officers includes the following titles descriptive of the area of jurisdiction or degree of responsibility: state, city, district or county health officer or commissioner; deputy commissioner, assistant commissioner or deputy health officer; assistant and senior public health officer or physician. Occasionally, an official health agency offers training positions to which a special title is given, such as apprentice health officer.

III. The Educational Background of Health Officers

The basic educational backgorund for the position of health officer should be as follows:

1. Fundamental training in the sciences and the humanities at least equivalent to that required for a college degree in the Arts or Sciences.

2. Completion of a course leading to the degree of Doctor of Medicine* in a medical school approved by the Council on Medical Education and Hospitals of the American Medical Association.

3. Internship of at least one year in an approved general hospital, preferably including communicable disease service.

4. Eligibility to examination for medical licensure in the state where service is to be rendered.

IV. Graduate Education and Training

Graduate education and training for the position of health officer should include the following:

1. Preliminary supervised field training in a well organized health department for a period sufficient to give acquaintance with the general aspects of public health and to give the candidate an opportunity to determine his own liking and fitness for such work.

2. Completion of a program of study leading to a degree in public health of not less than one full academic year in a university approved by the American Public Health Association. The university in which such a program of study is pursued should have a well organized school or department of public health with a corps of full-time instructors recognized as leaders in their respective fields, ample laboratory, library, and other facilities, and access to official and voluntary health agencies willing to provide facilities for field training and experience.† The program of study should cover the general field of public health administration, biostatistics, environmental sanitation, epidemiology, health education, laboratory

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* Because of the trend upon the part of governmental bodies to insist upon the medical degree as a prerequisite to appointment as health officer, it is inadvisable to encourage the candidate for a public health degree to look forward to a career as health officer unless he is also the possessor of a medical degree. In making this recommendation, the American Public Health Association expressly recognizes the professional standing of non-medical persons now performing creditable service as health officers.

† See Criteria for Accreditation of Schools of Public Health Granting the Master of Public Health Degree, prepared as a basis for accreditation by the Committee on Professional Education of the American Public Health Association and published in the *American Journal of Public Health* for March, 1946.

methods, public health nursing, physiological hygiene, the socio-economic aspects of health and disease, and should be accompanied by special instruction in the application of basic principles to the functions and duties of a public health administrator.

3. An additional year of practical experience in a subordinate position is highly desirable before the graduate in public health assumes full direction of even a small health unit.

4. Full-time practical experience is an essential part of the education of the health officer, and it is recognized that great achievement can usually be attained only after an adequate period of experience. Physicians otherwise qualified who have achieved notable success and who have had many years of full-time experience in a well organized health agency may be considered as qualified to serve as health officers even though lacking formal academic training. However, it is to be emphasized that an exception to the requirements of a postgraduate course and supervised field training should be made only if the candidate, in addition to years of experience, has actually demonstrated unusual ability as a public health administrator.

5. If the health officer is vested with the administration of a medical care program, efficient performance of these functions requires knowledge and skills of a special nature. Courses of instruction in this field should be included in the postgraduate course in public health, at least as electives in the program of training of potential health officers. Instruction should include courses in the socio-economic aspects of health and disease and in methods of establishing standards of quality of medical care, budgeting requirements and special administrative techniques, including hospital administration.

V. Personal Qualities

The health officer should possess the qualities of personality and character necessary to insure the successful prosecution of the scientific and administrative duties. These include such qualities as leadership, the ability to establish and maintain favorable relations with the public and his own personnel, creative ability, far sighted sound judgment and common sense, and the will to serve honestly and industriously at all times, subordinating his own desires to the best interests of the community.

ERNEST L. STEBBINS, M.D., *Referee*

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Medical Care in Maryland*

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THE Medical and Chirurgical Faculty (the State Medical Association of Maryland), aware of many deficiencies in the present status of medical care in Maryland and of the absence of an official warrant for any group in the state to evolve a coördinated program of medical care, proposed on August 23, 1939, in an open letter to the Chairman of the Maryland State Planning Commission, that a standing committee of the Commission be formed to survey the problems of medical care for the citizens of the state. It will be noted that the medical care program of Maryland was initiated by the medical profession and thus is bound to "enlist the coöperation and enthusiasm of the medical profession."

The suggested committee appointed by the State Planning Commission was composed of representatives of all agencies interested officially or on a voluntary basis, and held its first meeting in January, 1940. In the following years a field survey and other investigations were conducted to determine the availability of proper care. The objectives of the field survey were:

1. To study certain characteristics of the population
2. To describe existing medical care facilities including:
   a. Distribution of physicians, nurses, and dentists, and types of service rendered by each
   b. Functions of hospitals, health, and welfare departments
   c. Activities of other governmental, voluntary and private agencies
3. To estimate the number of indigent and medically needy and to analyze procedures followed by such individuals in securing medical care
4. To study the state health needs and give suggestions for securing more effective use of existing agencies, either by improving or extending their activities or by the organization of other services.
5. To estimate the cost of such a program

In April, 1944, the committee published its report recommending the establishment of a medical care program for the indigent and the medically needy of the counties. The report was presented to the Maryland Medical and Chirurgical Faculty at its annual meeting in April, 1944, and was approved unanimously by that group and sent to Governor O'Conor with the request that he recommend the necessary legislation. A bill providing for this plan for medical care was passed by the State Legislature and became law on February 9, 1945, when signed by the Governor. Following substantially the committee's recommendation, the bill provided that the medical care program should be administered by the State Department of Health through a new Bureau of Medical Services and that an advisory Council on Medical Care be created, representing medical, dental, pharmaceutical, and nursing professions, hospitals, public health and welfare agencies. The law also provided that the new Bureau of Medical Services should perform duties in connection with the licensing of hospitals and the administration of chronic disease hospitals which

* Presented before the Victory Meeting of The Public Health Association of New York City in collaboration with the American Public Health Association, New York, N. Y., December 14, 1945.

are slated for post-war construction.

To support the medical care program for the first two years an appropriation of $200,000 per year was approved by the Legislature. This is much less than the estimated cost of an adequate program for all the counties of Maryland, but it is the general opinion that it will suffice for a beginning, especially since a general prosperity was prevailing at the time the bill was passed.

In order that state-wide policies might be flexible, allowing for adaptation to local needs in the various counties, the Council on Medical Care decided upon the creation of a County Advisory Committee on Medical Care for each county. These committees include three members named by the county medical society; one by the county or district dental society; one by the Maryland Pharmaceutical Association; the executive of the county welfare board; the chairman of the board of county commissioners or his delegate, and the county health officer, who serves as chairman. Individual counties may appoint supplementary members at their own discretion, but it was suggested that the total number of members should not exceed ten. The council recommended that health officers naming additional members choose them from among minority racial groups, the department of education, nurses, local hospitals, or public health lay organizations.

Before services are started in any county, the county committee must submit an accurate and completely defined program to the Bureau of Medical Services. Immediately after the plan's review and approval by the bureau, services may be inaugurated.

For the first few months eligibility for medical care services under this plan is confined to the recipients of public assistance from the county boards of public welfare, except in cases of emergency need, when the health officer may authorize care of medically indigent persons. The program will be widened to include individuals not on relief as soon as a satisfactory "measuring stick" can be developed by which to judge eligibility of this group. Final responsibility for certification of eligibility rests with the county health officer. In the future he or his designated agent will determine the eligibility of the medically indigent on the basis of certain medical and social factors not yet completely defined. Among the criteria will be the applicant's income and other resources, such as home-grown food, special expenses or current debts, family size, diagnosis of the illness, probable length and cost of the illness, status of the patient, whether chief wage earner or dependent, outlook for complete recovery or the likelihood of recurrence, probable effect on future earning capacity, eligibility for care under other programs, any insurance the patient may have, and, finally, whether or not the family would have to go into debt to pay the cost of needed care.

The comprehensiveness of the local program is to be determined by each county according to the most pressing needs of the area and the amount of money available. Services may include home and office care, surgery, obstetrical services, consultation, dental care, bedside nursing care, drugs, laboratory services, and clinics. Other types of services may be inaugurated with the approval of the Bureau of Medical Services.

Funds have been allocated to the counties in proportion to the number of persons receiving assistance from the county board of public welfare. In many counties several other agencies were already providing medical care. This program will not duplicate or replace any existing services, but it may supplement them or inaugurate new services.

To simplify and facilitate administra-

tion of the state-wide program, a uniform fee schedule has been adopted for all counties. Uniformity was thought to be especially important in cases where a physician lives near a county line and practises in more than one county. Rates on the fee schedule were determined in large part according to recommendations made by County Advisory Committees. Since few counties would provide all the services mentioned in the fee schedule at the beginning, each county was advised to reproduce the part applicable to its own program and distribute it among the physicians and dentists of the area.

A system whereby expenditures could be strictly limited to the funds available was necessary. Accordingly the funds on hand for each county have been set up in monthly allotments.

The fee schedule to which the Maryland counties adhere is given below:

Home Visits—day (8:00 a.m. to 8:00 p.m.) $3.00

Home Visits—night (8:00 p.m. to 8:00 a.m.) $4.00

Note: If physician treats more than one patient on a home visit, he shall receive the regular fee for the first patient, and $1.00 for each additional patient.

Office Visits $2.00

Note: No payment allowed for telephone calls.

Hospital Visits—on medical care $2.00

Travel—For home calls more than ten miles from the office of the physician, an additional payment of $1.00 will be made.

Drugs—Fees for visits indicated above include payment for simple drugs customarily dispensed by the physician. If special drugs of a more expensive nature are indicated, a prescription may be written, and payment will be made direct to the pharmacist. If the physician finds it necessary to dispense drugs, the cost of which is greater than 50¢, he may enter the cost of the drug on his Medical Report in the space marked "Special Services," and additional payment to cover this will be made. Physicians are urged to avoid the use of proprietary remedies when drugs listed in the U. S. Pharmacopoeia or National Formulary can be used.

Maternity Care—Including prenatal care, delivery, and postpartum care. Physician may refer patient to Health Department Clinic for prenatal and postpartum care if he so desires. $35.00

Note: The law makes no provision for payment to a midwife.

Major Surgery—Including preoperative and postoperative care not to exceed $50.00

Minor Surgery—Including preoperative and postoperative care (simple fractures, dilatation, curettage, etc.) not to exceed $25.00

Assistant at Major Operation—Not to exceed $10.00

Anesthetist—For general anesthetic—not to exceed $10.00

Consultation—By local consultant $5.00

By out-of-town specialist (Member of Specialty Board) $10.00

Note: Mileage for out-of-town specialist will be allowed at 30¢ a mile one way, up to a maximum of $10.00.

Dental Care—Single extractions—not to exceed $2.00

Multiple extractions for same patient at same sitting—first tooth $2.00

Each additional tooth $1.00

Maximum payment for extractions for one patient $10.00

Silver amalgam fillings, each $2.00 to $3.00

Silicate, or other cement fillings $2.00

Dental x-ray, each $1.00

Maximum fee for dental x-ray on one patient $5.00

Other office treatments $2.00

Full dentures—to be made of vulcanite only:

Upper or lower denture—not to exceed $35.00

Upper and lower denture—not to exceed $60.00

Repair of denture—not to exceed $6.00

Home visits when essential—same basis as physicians

Oral surgery—same basis as physicians

Laboratory Service—In any program providing medical care, indicated laboratory services, including x-ray should be available. When there are existing free services they should be used. Physicians taking x-rays in their offices may be reimbursed at cost, not to exceed a maximum of

$5.00 per patient. X-ray or other special laboratory services may be purchased from hospitals or private laboratories on a basis of minimum rates for indigent patients.

Physicians and dentists are to submit to the county health officer a single report of services rendered to each patient. These reports are reviewed and approved by the county health officer, who sends them to the Bureau of Medical Services for payment.

If the health officer questions the accuracy or validity of any report received from a physician, pharmacist, or dentist of his county he may seek the advice of the County Advisory Committee on the matter. On the other hand, any physician or other person who has rendered medical services may present his case to the County Advisory Committee if dissatisfied with the payments received.

General policies governing the administration of the medical care program have been based upon recommendations made by the State Council on Medical Care. In determining these policies that group has given full weight and consideration to the opinions expressed by the County Advisory Committees on Medical Care and has also attempted to balance two more or less opposing principles. They recognized the dual importance of allowing individual counties the greatest possible freedom to adapt the program to their peculiar needs and, at the same time, of maintaining a reasonable degree of uniformity throughout the state in order to simplify administration, record keeping, and future evaluation of progress.

By October 25, 1945, the Chief of the Bureau of Medical Services reported that twenty-two counties had submitted final plans for their medical care programs. (As of January 1, 1946, all counties have accepted the plan.) Programs were actually in operation in a majority of these counties. Most of the final plans included requests for consultation service. Seven of them included specialty clinics, the types most frequently requested being ophthalmology, nose and throat, and psychiatry clinics. Nearly all of the remaining counties were working on their final plans by the end of August. Since the law inaugurating the medical care program did not go into effect until June 1, 1945, and funds were not available for its administration until July 1, this may be considered very satisfactory progress.

Maryland's medical care program is a result of the coöperative efforts of physicians, dentists, pharmacists, public health authorities, and welfare agencies, who are striving to bring adequate care within the reach of those who cannot afford to pay for needed services. Attempts are being made to provide better quality medical care to the indigent and medically needy residents of our counties by providing services of physicians and dentists, clinics in specialty fields, diagnostic laboratory services, consultation service, and bedside nursing care. Policies have been formulated with the full coöperation of all the groups concerned, and a continued unified effort is essential to the success of this undertaking.

The program is a new venture in public health and one that may be accompanied by errors. It is believed, however, that vigilance to detect these mistakes and willingness to correct them will help to insure its success. Above all, needs of groups intended to benefit from the medical services must be kept in the foreground, for the entire medical care program has been established for the sole purpose of serving these sections of our population.

Health Insurance Plan of Greater New York*

A General Statement of Its Principles and Program

DEAN A. CLARK, M.D.

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THE Health Insurance Plan of Greater New York has been receiving an increasing number of requests from physicians for information about its program. These requests, in the form of letters, telephone calls, and visits to the HIP office, come from physicians who are or have been in the armed forces and from many in civilian practice. Most of these physicians have expressed a desire to enter into group medical practice because they believe that, by integrating their knowledge and abilities with that of their colleagues in the form of group practice, and by coördinating their activities with other agencies, they will find increased professional opportunity and satisfaction and at the same time a greater measure of economic stability. It has been a source of encouragement to HIP to note their enthusiasm and their awareness of the necessity for improving the distribution of medical care. The Health Insurance Plan of Greater New York is, indeed, the outcome of just this awareness among physicians, employers, labor, and welfare leaders in New York City.

The HIP is a non-profit membership corporation authorized to conduct a program of voluntary health insurance in the New York City area. Although it is frequently spoken of as the "Mayor's plan" because of the prominence of Mayor LaGuardia among its sponsors, it is a private organization and is not a part of the city government.

The governing body of HIP is a Board of Directors composed of individuals from medicine, labor, city government, social welfare, and business. With a board which is broadly representative of various groups in New York, it is hoped that HIP will develop as a true community effort and not be identified with the interests of any one group alone.

Enrollment in HIP is voluntary and will eventually be open to all employed persons resident in New York City earning less than some stated income limit, together with their dependents. At the start, however, enrollment will be by employee groups. By this method, which is in general use in the Blue Cross hospitalization plans, the employees of a given business or department are accepted for membership only if a sufficient proportion, such as 75 per cent of the entire group, agree to join. In this way, the Plan is enabled to secure a fair cross-section of the population. The HIP expects to start with approximately equal numbers of city employees and employees of private industry and their families. Premiums to cover both employees and their dependents will amount to approximately 2 per cent of the employees' earnings and an equal

* Presented before the Victory Meeting of The Public Health Association of New York City in collaboration with the American Public Health Association, New York, N. Y., December 14, 1945.

contribution from employers, or 4 per cent in all.

Services to be provided by HIP are to be comprehensive. They will include all preventive, diagnostic, and therapeutic medical services in home, office or center, and hospital; laboratory work, x-ray, physical therapy, hospitalization, and visiting nurse service at home. Dental care will not be included at the start, although it is hoped to bring in children's dentistry later. Drugs will not be furnished except where they are dispensed as a part of hospitalization or physicians' service. With respect to physicians' and technical services, all types of acute and chronic illness will be covered, and there will be no time limits for these services so long as the patient remains an active subscriber to HIP. The only exclusions from such services will be for drug addiction, acute alcoholism, purely cosmetic surgery, and conditions requiring long-term institutional care.

Hospitalization will be furnished through joint arrangements with the Associated Hospital Service. Limitations on length of stay and conditions to be covered for hospitalization will, therefore, be identical with those of the standard Associated Hospital Service contract, and payment to hospitals will be made directly by the Associated Hospital Service.

HIP will concentrate its efforts upon furnishing an integrated medical service of high quality. In order to do this most effectively and economically, comprehensive medical services will be supplied through general practitioners and specialists associated with each other in medical groups, in a number of different centers. HIP expects that the bulk of the services for its beneficiaries will be provided by arrangement with such group medical practice units, each including physicians of various general and special skills working together as a team for their patients' benefit, aided by suitable assisting personnel and using office facilities and equipment in common.

Some of the medical groups being formed to collaborate with HIP will be centered at hospitals and will start with a nucleus of physicians on the present hospital staff. Specialists working at the hospital will arrange, together with either the general physicians of the hospital group or with other general practitioners, to provide the complete home, office and hospital care offered by HIP. The medical staffs of several leading hospitals and medical schools have already indicated great interest in establishing groups of the above type. In certain instances, hospital groups will include the entire staff of a hospital functioning as a unit; in others, only a portion of a hospital's staff may wish to participate, while all physicians—participating and non-participating—will continue to serve at the hospital with their present relationships unchanged.

Besides these hospital-centered groups, a number of individual physicians are seeking assistance in forming their own private groups, some loosely affiliated with particular hospitals, and others not so affiliated. These private groups would include general practitioners and specialists, part- or full-time; the hospitalized cases of such groups would be attended as semi-private or private patients in the hospitals at which the physicians of the groups have staff or courtesy privileges.

A major objective of HIP is to provide opportunities for general practitioners to work effectively in professional association with specialists and hospital groups. It is a matter of great concern to both the medical and lay members of the HIP Board that large numbers of general practitioners today are forced to practise in comparative isolation, frequently without the benefit of hospital privileges. This unfortunate

fact has resulted in professional frustration among a very sizable section of the medical profession and has contributed to such abuses as fee splitting. Through formal association with specialists in group medical practice the general practitioner will have a better opportunity to practise the kind of integrated medicine he learned to expect from his medical school and hospital training. Group practice offers similar opportunities for physicians recently graduated to develop special skills and professional qualifications under the guidance of the more extensively trained members of the groups. Such opportunities will be especially advantageous for veteran-physicians seeking to establish themselves after returning from the Services.

Under whatever auspices groups are formed, through hospital staffs or by independent practitioners, service to subscribers will necessarily stem primarily from the general physician, who will therefore be the key figure in any group. It is HIP's conviction that the general practitioner, bulwarked by the available services of the whole group and freed from the pressures of bill collection, will be able to achieve the satisfaction of being a true family medical adviser and to establish the all-important patient-doctor relationship, so infrequently achieved in large cities. In most medical groups each patient would be under the general care of one physician who would refer him to others as necessary, but who would maintain responsibility for his long-range care. As in other types of practice, patients would be free to change doctors, and doctors would be free not to accept particular patients. The experience of medical groups in other communities shows that a high degree of continuity of relationship between patient and physician can be achieved within a group.

The various groups which participate in the HIP plan may differ widely in their organization. No rigid plan of medical group organization is envisaged by HIP; rather, experimentation with various types is to be encouraged within the bounds of maintenance of minimum standards of professional care and administrative integrity. Whatever the plan of organization of a group, all professional aspects of its services must be under the direction of physicians.

In the near future, a Medical Control Board is to be appointed by HIP, independent of its Board of Directors, composed of physicians representing HIP, the county medical societies, and medical groups participating in the HIP program, which will establish minimum professional standards to be met by medical groups wishing to take part in the program.* HIP will be prepared to make agreements with all groups of physicians meeting these standards. The financial arrangements of each group must, of course, be mutually satisfactory to the group as a whole and to the individual affiliated general practitioners and specialists, if the medical group is to be successful. The collaborating medical groups will remain autonomous units, independent of HIP but serving insured persons by agreement with it.

It may be difficult at the start, in many cases, for complete medical groups to establish themselves because of insufficient professional and technical personnel, space, supplies, and equipment. It is hoped, however, that as many complete groups as possible will be formed and, where this cannot be done, that the nearest equivalent will be organized. Thus, while a complete medical group might be described as one which provides offices at one central location for all its general practitioners and specialists, and which is fully staffed and equipped to provide all types of home, office, and in-hospital care from that center, such completeness may not be

* The county medical societies are engaged in formulating a set of minimum standards for group practice.

immediately realized in many instances. Many groups, rather, may consist of a nucleus of physicians of various skills whose offices are located in a single center, and a number of physicians who spend a part of their time at the center but continue to maintain their own individual offices outside. In addition, such a group would need to make arrangements with certain highly specialized consultants who would only serve when called upon. Because of the factor of distance between subscribers' homes and a particular center, some medical groups will no doubt find it desirable also to make arrangements with practising general physicians to provide home and office care, on behalf of the group, from their own offices. In such a case, the general physician would refer to the group center patients in need of specialized diagnosis and treatment who would later be returned to the general physician with a complete report. As the number of participating medical groups increases, the distance between subscribers' residences and the various group centers will decrease, so that it will be possible gradually for more and more of the participating physicians to establish their offices in the group centers.

Initial HIP enrollment of subscribers will of necessity be limited to the number of persons who can be adequately cared for by available physician-groups. Subscribers will be asked, at the time of application for membership, to choose from among the participating medical groups, the one by which they wish to be served. This freedom of choice will, of course, be subject to the willingness of the medical group chosen to accept the subscriber for service. Amounts of payment to a participating medical group will be based upon the number of subscribers and dependents who select that group.

The HIP will go into operation by degrees. The medical groups formed at the start may of necessity be neither large enough nor numerous enough to include every physician who might wish to join such a group. The opportunity will be open from the beginning, however, to all licensed physicians in New York City to form medical groups suitable for collaborating with HIP or to associate themselves with such groups. The HIP will make a concerted effort, moreover, to see that such opportunities soon become accessible to all who desire them. The HIP wishes to foster and encourage the organization of medical groups in all parts of New York City and will gladly give all assistance possible toward their establishment.

Thus, the ultimate objective—a network of fully staffed and equipped medical groups throughout the city—can be realized through an evolutionary and orderly process. A date has not yet been set for the opening of HIP services to the public, but the interest manifested in the plan by physicians and the general public has stimulated action toward an early beginning of operations. Large industries and employee groups have indicated their readiness to enroll in such a prepayment plan as soon as the first group practise units are ready to operate. Meanwhile, much groundwork has been laid. HIP has been incorporated under the insurance laws of the State of New York; the State Legislature has passed a law permitting the city government to make deductions from payroll for city employees' share of premiums and also permitting the city, as employer, to contribute an equal share of premiums on behalf of its employees and their families; the city has appropriated $500,000 to be used as its initial budgetary contribution toward premiums of those employees who desire to subscribe to the plan.

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PANIC OR REASON IN DEALING WITH POLIOMYELITIS?

WHEN two or three cases of infantile paralysis are reported in an urban community during the late spring or summer, there always develops a certain feeling of public anxiety. If the number of cases shows a tendency to increase, this anxiety develops into fear and the fear into a state bordering on panic. The public press too often makes a sensation of the situation and calls on public officials, particularly the health department, for some unusual display of action.

Under pressure of this kind, health departments often respond by what the physiologist calls "random movements," in ways which have but little scientific warrant. Schools are closed, the use of swimming pools is forbidden, and a so-called "clean-up" campaign is inaugurated. This much may be justified under some circumstances, but too frequently it does not stop here. Swamps and stagnant pools are often drained and it has lately become the fashion to dust the city with DDT from the air. At nearby army and navy reservations the commanding officers are often induced to declare the city theaters and other public places out-of-bounds. Neighboring communities may refuse entry to persons from the "infected" city by establishing road blocks manned by state guardsmen who stop cars and buses to "question and instruct" the occupants.

All this is sadly reminiscent of the days of yellow fever and the shot-gun quarantine of a century ago, when people were driven by blind fear, ignorance, and superstition. It should not be tolerated today, in view of the advance in knowledge of the causes and modes of dissemination of the agents of infectious diseases, and particularly of poliomyelitis. Why, then, is reason not applied in such situations? Is it because the general public and the medical profession are not properly informed? Is it because public health officials of many municipalities have been chosen for political reasons rather than for their scientific and practical qualifications? Because public leadership does not stand against popular clamor, hoping perhaps to bring about desirable sanitary reform? Or because the public health profession is itself misled by the halftruths of scientific research as reported in a sensational press or in propaganda booklets such as the one entitled "Pollution and Polio," recently published by the Izaak Walton League of America?

Perhaps it is some mixture of these reasons. But if we are to establish the rule of intelligence in dealing with this disease, it is fundamental that the public health profession itself, at least, be not misled. In view of present-day knowledge, the following statement from an editorial * in an engineering journal of high standing is certainly a dangerous half-truth: "Polio may soon be recognized as a problem of sanitation and the sanitary engineer may take the task of building defenses against the spread of this dread disease, just as he did against typhoid. Now that polio is labelled by scientific research as a filth disease, spread by human wastes, the sanitary engineering profession must assume some responsibility for its control. If the virus is carried by polluted waters, and spread by the fly, as the present status of research seems to indicate, the edict becomes reasonably clear: we must prevent pollution and stamp out the fly."

It is not perhaps surprising that engineers should take this view since the concept that infantile paralysis is a water-borne or an insect-borne disease has not lacked some tacit approval from competent epidemiologists. Yet, all of the evidence which has been accumulated since the studies of Wickman, and including the most recent observations confirmed by animal inoculations, have tended to establish firmly the concept that poliomyelitis is exclusively a human infection and that the virus is passed rather directly from an infected person to a non-infected susceptible individual. The frequency with which contact-transmission can be traced has varied widely according to the definitions and criteria adopted, the skill and persistence of the investigator, and the circumstances of occurrence. If inapparent and subclinical infections are considered, as well as clinically recognized cases, frequency of traceable contact is of the same order as that which can be established in studies of diphtheria, scarlet fever, meningococcus meningitis, or bacillary dysentery. It is not yet clear whether effective contact involves transmission through the air by droplet nuclei, droplets or sputum particles, or mechanical transmission from objects contaminated by oropharyngeal secretions, or by feces to hands (and occasionally by flies) and thence to food to mouth—or by both routes.

Evidence that the virus may travel from one person to another by more remote channels is lacking. How long the virus may survive in sewage and sewage polluted water is unknown and undoubtedly variable according to conditions. Up to the present time there is no more reason to believe that the virus of poliomyelitis in sewage is of importance in transmission than to believe that the presence of tubercle bacilli in feces and sewage is of importance in the transmission of tuberculosis; or that the presence of *Pasteurella tularensis* in the streams of western Montana is of importance in the transmission of tularemia.

Although epidemics of poliomyelitis have been carefully investigated by numerous epidemiologists over many years, there is no record of this disease having been spread by a common water supply. There are a very few instances—a matter of four or five—in which small groups of cases have been associated with a common milk supply, and none in which any other common food has been definitely incriminated as the medium of distribution of an explosive outbreak. Repeated investigations have failed to demonstrate a significant correlation between environmental sanitation and the occurrence of cases. The virus is easily transmitted from person to person under the conditions of ordinary contact in everyday life. In a matter of six to eight weeks, an epidemic affecting a considerable pro-

* Cohn, Morris M. The Vicious Virus. (Editorial) *Sewage Works Eng. & Munic. San.*, 17:149 (Mar.), 1945.

portion of the people usually runs its course, whatever the standards of living and sanitation may be.

Until new evidence is forthcoming, public health workers would be well advised to stick to the simple and well established concept that poliomyelitis is principally if not entirely spread by direct and intimate personal contact. The apparent mystery in its behavior arises from the fact that so large a proportion of the persons who harbor the virus are suffering from inapparent or subclinical infections, and are thus entirely unaware of their infectious state. Reduction in spread may possibly be effected to some degree by isolation of cases and selective restriction of familial associates. During an epidemic, advantage may possibly accrue from reducing the total number of daily contacts between individuals, but this should be regulated on a voluntary basis rather than by legal compulsions which disrupt community life. While municipal cleanliness and sanitation are always highly desirable, there is no reason to believe that improved methods of sewage treatment and disposal, more rigid standards for the purification of water supplies, or the dusting of DDT over a city from aeroplanes will have any measurable effect on the incidence of infantile paralysis.

MEDICAL CARE OF THE INDIGENT IN MARYLAND

ARTICLES in this issue of the *Journal* by Dean Clark on the Greater New York health insurance program and by R. H. Riley on the Maryland Medical Care Program represent valuable contributions to the practical techniques of organized effort in this important field. The Maryland plan is of special interest to our readers. It covers only one section of the population, the indigent and the "medically indigent"; but, in this limited field, it is a pioneer attempt at the orderly integration of medical care with the official public health program.

The initiative in developing this project was taken by the Medical and Chirurgical Faculty of Maryland (corresponding to the state medical society in other states) which, in 1940, asked the State Planning Commission to appoint a standing committee (including public representatives), to prepare a program. This program was presented to the State Legislature in 1945 and promptly adopted. Both the State Medical Society and the Planning Commission deserve great credit for prompt and efficient action.

The law provided for the establishment of a Bureau of Medical Services in the State Health Department and for the administration of the program—under the direction of that bureau—by the county health departments. Thus, the importance of essential decentralization to meet local conditions is recognized; and professional guidance is assured by the appointment of Advisory Committees of physicians, dentists, pharmacists, welfare officers, and others under the chairmanship of the county health officer. This is the sort of organization contemplated in the Wagner-Murray-Dingell Bill for health insurance in a wider sense.

The Maryland Plan is designed primarily to serve persons on public assistance but the "medically indigent" may be included, on a basis to be defined by the county health officer. The definition of this group by the health officer rather than a welfare officer is a distinct forward step.

The program of services to be provided is, in theory, a wide one, including full medical care, dentistry, drugs, and laboratory service. Hospitalization is cared for by funds already at the disposal of welfare departments.

Payment is to be made on a fee-for-service basis, according to a detailed state-wide fee schedule. The county advisory committees "may serve as a 'Court of Appeal' for doctors or patients who have a complaint to make." The financial soundness of the program will depend on the success of the county health officers and the advisory committees in regulating services and charges. It should be borne in mind that insurance plans (and this is, in essence, an insurance plan for one group in which the state provides the premiums) based on fee-for-service have historically been extremely liable to abuse in individual cases and have commonly resulted in progressively mounting per capita costs. The budget contemplated by the Planning Board is based on slightly less than $11 per patient served.

The first Annual Report of the Bureau of Medical Service of the State Department of Health has just come to hand. By January of the present year, all the twenty-three counties of the state had entered into the program. The report, however, deals only with the last six months of 1945.

In this preliminary period 2,101 patients were served, at a cost of $13,407. (The total available appropriation is $160,000 a year.) Of the 2,101 patients, 111, or 5.3 per cent, were "medically indigent"; the rest were public assistance cases. It is of special interest to note that 49 per cent of the clients were over 60 years of age. Dr. Riley states that with regard to dental care and bedside nursing care "the surface has hardly been scratched"; and that the establishment of consultation clinics in such specialties as ophthalmology, otolaryngology, internal medicine, and psychiatry is an urgent need.

Our ears have been deafened by philosophical polemics about the ideology of medical care. The way to learn how to provide such care is to provide it; and develop techniques on the only sound basis, that of practical experience. We shall learn much in coming years from the operation of the Maryland program. It is certain, however, that the chances of reasonably adequate medical care for the indigent are brighter in Maryland than in most of the states of the Union. If there are exceptions to this generalization we would welcome descriptions of alternative programs in this *Journal*.

THE GUNN-PLATT REPORT

A VIGOROUS attack by Donald B. Armstrong[1] on the National Health Council study of "Voluntary Health Agencies" raises questions which call for serious analysis—on both an empirical and a philosophical plane.

Few students of the Gunn-Platt report will agree with Dr. Armstrong's conclusions that the problems raised by this document "seemed hardly to require the costly and intricate study undertaken by the self-created committee of the Council or five years of scurrying around the country with an expenditure of upward of $100,000." The first edition of *Voluntary Health Agencies* has been exhausted and a second edition is now being rapidly distributed. From one end of the country to another, councils of social agencies, public health nursing groups, associations of board and committee members are studying the report page by page and holding state and local conferences for discussion of its findings. It can be said with truth that no other document published in a quarter-of-a-century has exerted such far-reaching effects on constructive thinking with regard to the functions of the voluntary health agency.

The best answer to such criticism will be a re-study of the report itself. We have reviewed its major findings in some detail in an earlier issue of this *Journal*.[2] The major assumption of the Armstrong discussion is that Gunn and Platt advocate a "merger" of voluntary health agencies, which is not the case. The report clearly abandons this goal (which has had powerful backing in the past). Aside from its invaluable suggestions as to the revitalizing of the individual health agency, which involve perhaps its most important contribution, the report makes two major suggestions with regard to coöperative action between different agencies. First, it recommends that "a serious effort be made to determine the soundness of unifying in one strong organization all related health promotional voluntary agencies in a city and in a state, with appropriate emphasis on all aspects of a unified health program." The second major recommendation looks toward a "pooling of the present separate and competitive and confusing appeals of the voluntary national health agencies into a unified nation-wide campaign" for fund raising. The report recognizes that the agencies which now have highly profitable fund raising techniques (for the campaigns against tuberculosis, infant paralysis, and cancer) are not likely at present to join in such a program; but the suggestion will probably be welcome to agencies in the fields (such as social hygiene and mental hygiene) which are now sadly lacking in resources.

What Dr. Armstrong himself advocates is much less clearly defined. He suggests that "arrangements might be made whereby they (venereal disease efforts) could share in the more generously financed movements, especially those with unusually successful money raising devices, such as those used by the National Foundation for Infantile Paralysis, or such as the seal sale so effectively utilized by the National Tuberculosis Association." But, in the very next sentence he adds, "Of course it should be realized that criticism of the well-to-do agencies because of their success in fund raising, and an effort to encourage or force them to carry their impoverished colleagues might really if pressed too far, induce an element of public deception and might also actually signify an extension into this field of the prevalent 'soak the rich' policy."

Again, Armstrong's whole argument is based on the fear of too strongly centralized a Health Council. Yet he proposes the creation of a new American health league which should include not only the present Council agencies but a number of medical, hospital and dental groups to undertake political action on a grand scale, to fight for certain particular policies in medical economics and—specifically—to oppose the American Public Health Association program for national health.

In one paragraph he says that "any soundly American organization will want to maintain the independence nationally of the major voluntary movements but will at the same time wish to encourage a coöperative federation or conference procedure encompassing all the important national health and medical agencies. It will want to develop on a state and local basis the proper machinery for the integration of effort, whether this is a council, a federation, or an actual consolidation of agencies." This would seem to be an admirable statement of the essential objectives of the Gunn-Platt report; but all the rest of the article gives the impression of an attack on that report.

The spirit and temper of Dr. Armstrong's discussion seems unfortunate. Here are fighting words quoted almost at random from its context: "contrary to the American traditions and possible only in a regimented society"; "Hitler or Stalin could force it and no doubt would"; "Community organizers who are

communistically inclined"; "the same collectivistic ideology and the same desire for organized monopoly"; "the regimentation of medicine"; "wartime bits of collectivism and statism"; "European collective and socialization procedures"; "the same formula has more recently been demonstrated by the Facists in Italy, the Nazis in Germany and the Communists in Russia"; "the road to communistic hell is paved with well-intentioned socialistic or collectivistic experimentation"; "natural fermenters of statism on the medical level." Throughout, the ideology of Hayek is dominant; but Dr. Armstrong appears not to have read the more recent—and most effective—confutations of that writer by Finer and Wooton.[3]

Particularly regrettable are Dr. Armstrong's references to Professor Gunn and Dr. Platt as "laymen under the direction of a committee also under lay leadership"; and to "clever 'leftish' lay leadership in the American Public Health Association." Dr. Armstrong should know that both the authors of the report were holders of degrees in public health and were not laymen in this field; and that no one can be a Fellow of the American Public Health Association who is not a professional public health worker. The physician who lacks special training in public health is a layman in our profession; and the engineer or nurse who possesses such training or experience is not.

The discussion of a proposal for voluntary coöperation in fund raising by a group of agencies and for experimentation in coördinated service on a local level as communistic and totalitarian is unjustified. Our Community Chests are expressions of the soundest type of democratic coöperation—not steps on the road to Moscow. Such phrases as those cited are not only nonsense, but dangerous nonsense. Man has primitive instincts still; and appeal to the endocrines can easily override the intellectual faculties. The unfortunate person who looks for a communist under the bed every night is in need of psychiatric counselling if he is sincere, and of some other form of social treatment if he is not.

Curiously enough, Dr. Armstrong falls into precisely the philosophical error which he strives to combat. He is concerned about the danger of ideology; but his entire article is dominated by an ideology of his own. It is quite as illogical to condemn any form of coöperative action whatever because of the fear of communism as it is to favor every form of coöperative action because of the love of communism. Webster's definition of "ideology" (the first definition being technical and metaphysical) is as follows: "Visionary speculation; idle theorizing; also an impractical theory, or system of theories." In general, unfavorable international comparisons are dangerous. Yet it may fairly be said that the tendency to regard phenomena from the viewpoint of their relation to a preconceived theoretical philosophy is more developed in Europe than in the United States. Here, we are more accustomed to a practical and empirical approach. Dr. Armstrong is un-American in his tendency to evaluate all programs, not on their merits, but on the basis of their assumed relationship to his own abstract anti-collectivist philosophy.

In a recent magazine article (which is worthy of reading by every thoughtful person) Charles Morgan [4] points out that "the tendency of our time is for human thought, alarmed by the rapidity of change, by the seeming dissolution of society into a condition of flux, to congeal into stiff, uniform chunks of fierce and frightened orthodoxy." He illustrates this fact by the reaction of his own people to the confusion which arose in Greece after the Germans were driven out. He notes that "when the trouble began, a great part of British opinion, instead of suspending judgment and waiting to ascertain the facts, instead of trying to

discover patiently where the true interest of freedom lay, aligned itself hastily on the Left or on the Right, and began to think and talk and write for or against one or other of the authoritarian ideologies. It was as if the minds of the British people had already begun to stiffen, to congeal into two clots of opinion, as if we had begun to lose our independence of judgment, our resilience of imagination, our power to refer each new problem, not to some rigid rule, but to our own consciences, our own sense of compassionate justice. It is the radical principle and the invariable practice of all authoritarian systems to freeze imagination, to prevent men and women from thinking for themselves. It is the radical principle of art to unfreeze the imagination and to enable men and women to think for themselves."

Morgan is discussing the responsibilities of the artist. It should be even more the responsibility of the man of science to " unfreeze the imagination," bound by emotion or tradition " and to enable men and women to think for themselves."

The decision as to the best method of organizing our voluntary health agencies is not an ideological choice between anarchism and communism. It is a concrete practical problem of organization to be based on reason and common sense. There can be no totalitarian threat to the liberty of the agencies concerned because any action whatever which they take will be taken by themselves, so far as they are convinced of its wisdom; no dictatorship except the dictatorship of their own consciences. The only possible menace is the threat to the freedom of the spirit involved in the substitution of appeals to emotional ideology in place of rational empiricism. The question is simply one of deciding how far it is wise to go in voluntary coöperative planning for the common good. The Gunn-Platt report is of inestimable value in helping us to decide that question.

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Credit Lines

NEW HAMPSHIRE CITIZENS' COUNCIL FOR THE GENERAL WELFARE

After a year of discussion by a Committee of Citizens of New Hampshire and selected outside advisers on the desirability of developing a state planning organization in the fields of health and welfare, the New Hampshire Citizens' Council for the General Welfare was incorporated as a non-profit agency in December, 1945. Its stated purposes are:

> To study the state, its welfare and health problems and interrelated problems such as education, and the adequacy of provisions and resources for meeting them; to further coördination and high standards in the operation of resources and the development of new services; to give information and counsel to the organizations involved when they desire it; to advise local communities; to serve as an information center and clearing house in matters of health and welfare; to make information available to the governor and legislature on matters in these fields; to maintain common services; to serve as a vehicle for concerted action for groups with similar interests within the scope and spirit of this organization.

The offices of the agency are at 3 North Main Street, Concord, N. H.; its Executive Secretary is George P. Drowne, Jr., a trained social worker.

Apropos of this development the National Community Chests and Councils (15 East 44th Street, New York 17) has recently prepared a memorandum on community organization for health and welfare on a state-wide basis. It declares that, "The development of coordinating, planning, and joint action programs on a state-wide basis in the field of health, welfare, and recreation seems destined to be one of the distinguishing features of the current period in community organization history." It finds that, "All but a half dozen states have embarked upon some kind of program for handling one or more aspects of the community organization job." Its report includes a more detailed analysis of recent movements in Massachusetts, Michigan, New Hampshire, Ohio, and Rhode Island, as well as an appendix summary of developments by states.

MEDICAL WOMEN'S ASSOCIATION JOURNAL

The *Journal of the American Women's Medical Association* made its bow in April, 1946 (Vol. 1, No. 1). Its editor is Dr. Elise S. L'Esperance, long noted for her work in cancer prevention in both Memorial Hospital and New York Infirmary for Women and Children in New York. Of the 37 members of the Editorial Board, 8 are from countries other than the United States.

The first issue is devoted to Cancer, since April was designated as Cancer Month by the President and the Congress of the United States. Subsequent numbers will emphasize other special topics.

This *Journal*, planned for monthly publication is well printed on good paper, with excellent photography. The JOURNAL through Credit Lines welcomes the *Journal of the American Women's Association* to the fellowship of professional journals.

HEALTH DEPARTMENT PUBLIC RELATIONS

"The problem of public relations is that of getting affirmative responses," says Professor Harry Overstreet, in Public Relations Practices of a Health Department (*Michigan Public Health*, Dec., 1945). He summarizes six ways of getting "yes" responses to proposals of the local health department—the way of friendliness, of sympathetic un-

derstanding, of the right word rather than the terrifying professional jargon, of lay involvement in projects, of a non-authoritative approach, and of a knowledge of how to make ideas stick by relating them to the individual's life. An article well worth reading by all staff members and not merely those in official charge of public relations. Professor Overstreet reminds us that the telephone operator and the receptionist are the first in the line of contact between department and public.

PRESCHOOL PHYSICAL EXAMINATIONS IN HINSDALE, ILL.

Hinsdale, Ill., with a population of approximately 7,500, has a Kindergarten Summer Round-up program for the health of school children. Its 8 year results have been described for Credit Lines by Naidene Goy of the staff of the Hinsdale Township High School.

As a result of the 1946 campaign, 90 per cent of the children entering the public schools this fall will have had complete physical examinations and a complete medical record for the guidance of the school health program. The 1947 goal is for a 100 per cent record.

This is a community project originally sponsored by the Parent Teachers Association. Local physicians and dentists, the Hinsdale Retired Nurses Association, the Du Page County Nurses, and the Hinsdale school nurse have all coöperated in the program which is extended to both public and parochial schools.

A local Union Church provided housing facilities for the clinical and clerical services in 1946. The child's physical examination was used as well to orient him in his new life as a school child. It was the first step in his preparation for school. Following the examinations the children were invited to a kindergarten party. There they met their future kindergarten classmates, while their mothers met the kindergarten teachers and the school principal and supervisors. A total of 120 children were examined. Local Girl Scouts delivered registration blanks to each home.

The program modestly begun eight years ago, under Parent Teachers Association auspices, was accelerated by the passage of the Illinois law which requires birth certificates for school admission and requires physical examination of the child during the fifth grade and during high school years.

MIGRATION AND IMMIGRATION

Credit Lines is indebted to the National Social Welfare Assembly for two timely pamphlets about migrations arising out of the late war. One is *Entrance into the United States of Alien Wives, Minor Children and Fiancées of United States Servicemen or Veterans.* This interprets many of the legal problems of alien dependents of service men. It includes "a summary of laws and regulations which affect the right of such persons to admission to the United States." (Available as ARC 1271 from the American Red Cross, Washington, D. C.)

The other is *People on the Move*, by Social Security Board Chairman A. J. Altmeyer. It discusses trends in residence and settlement laws in relation to mass migrations of recent years to war industry centers. (Social Security Board, Washington 25, D. C.)

LABOR AT THE NATIONAL CONFERENCE OF SOCIAL WORK

The new atmosphere in the working relations of labor and social work was graphically illustrated at the recent conference of social work in Buffalo. According to one tabulation, 14 different representatives of labor were on the Conference program. Both AFL and CIO were represented in the discussions of the Community Organiza-

tion and Planning and the Industrial and Economic Problems Sections. Other sections with trade union discussants were Health, Public Welfare, and Administration. The Joint Committee on Trade Unions in Social Work had three afternoon sessions during the Conference, and the National CIO Community Services had two.

ALCOHOLISM—TWO CURRENT PAMPHLETS

The Research Council on Problems of Alcohol has published a useful pamphlet, *The Scientific Approach to Chronic Alcoholism*. Made up of three parts it discusses briefly the problem of alcoholism and the present direction of remedies; analyzes the program and resources of the Council itself, and summarizes other activities—official and voluntary—in the field of alcoholism control. It may be ordered from the Research Council on Problems of Alcohol, 60 East 42nd Street, New York 17. There is a charge for quantity distribution.

Alcoholism Is a Sickness, by Herbert Yahraes, was published in June as *Public Affairs Pamphlet No. 118.* In popular form this gives the scientific facts about the disease of alcoholism and recommends the rational and humane steps the public needs to take on this health problem. The most important preventive measure suggested is "the building of a society in which the individual is better fed and housed, has better medical care, has better facilities for mental hygiene, has fewer money worries, and has the facilities and the encouragement to engage in recreational activities besides drinking." (Available from Public Affairs Committee, 30 Rockefeller Plaza, New York 20, for 10¢, or less in quantity.)

CONTROL OF FLIES IN THE NEW YORK MILK SHED

The recently published pamphlet, *The Use of DDT in the Control of Flies on Dairy Farms,* is an interesting example of inter-community, inter-agency, and inter-state coöperation. The procedures outlined were formulated by Professor H. H. Schwardt of Cornell University's Department of Entomology.

The instructions are clear, simple, and definite and are suitably qualified for the small dairy operator. The pamphlet was sponsored and the methods were approved by the New York and New Jersey State Health Departments, the New York City, Newark, Jersey City, Westchester and Nassau County Health Departments, the Connecticut State Dairy and Food Commission, and the Vermont State Department of Agriculture. A uniform fly control program throughout the area is thus possible.

The Milk Dealers Association of Metropolitan New York has printed 100,000 for distribution at cost to operators of country milk plants. Dairy farmers in the milk shed will receive free copies from the plant operators.

DENTAL CARE IN NORTH CAROLINA

Distribution of Dentists in North Carolina reports that the accumulated dental needs of the state would require the services of the current 926 dentists of the state for a period of 12 years without any allowance for current needs. Other facts pointed out are that the state ranks 33rd in number of persons per dentist, that North Carolina residents are under-represented in dental schools of the country, that the state has no dental school, that rural areas are in a worse plight than urban and Negroes than whites.

The author, Selz C. Mayo, Professor of Rural Sociology, of the North Carolina State College (Raleigh, N. C.) ends his report with a discussion of the legislative proposals "that have been made to improve this deplorable condition." He notes that "The North Carolina Hospital and Medical Care

Act" of 1945 makes no mention of dental care. He analyzes the dental provisions of the Wagner-Murray-Dingell Bill, the dental research provisions of S. Bill 190 which would establish the National Institute of Dental Research and S. 1099 which would provide assistance to the states in developing and maintaining health programs.

CLEVELAND STUDIES APPENDECTOMIES

An analysis of 19,399 operations for appendicitis occurring in 16 Cleveland hospitals during a 12 year period has recently been published. This is said to be the largest series of operations for appendicitis ever studied anywhere.

The study was designed to throw light on such questions as age, sex, and delay in having the operation upon the fatality rate, as well as the effect of anesthetic, type of incision and drainage.

The data were collected by the Cleveland Appendicitis Survey Committee of the Cleveland Academy of Medicine with the financial aid of the Cleveland Foundation. They were analyzed by Howard Whipple Green, Director of Research and Statistics of the Cleveland Health Council—Green, Howard Whipple, and Watkins, Ralph M., M.D. Appendicitis in Cleveland, Cleveland Health Council, 1001 Huron Road, Cleveland, Ohio.

CHICAGO HEALTH EDUCATION HANDBOOK

The Health Education Committee of the Chicago Council of Social Agencies has just published a *Health Education Handbook for Chicago and Cook County*. This describes the health education services of 34 agencies of the city, county, and state available to Cook County area, and the conditions under which the services are available. There are also an index by specific health topics, a list of selected books on health education principles, methods and materials, a list of periodicals and abstracts, and the libraries in which they can be found, and information about health and educational films. This publication could easily serve as a model of similar handbooks in other areas.

The Elizabeth McCormick Memorial Fund has made possible its free school distribution.

LEARNING OUTSIDE OF BOOKS

Three new publications in the CCC "School Program" series have just been announced. The series is designed narrowly as a year-round interpretation of community programs but broadly as an extra-curricular means of education in citizenship. They are: *Building Together*, a selected reading list for four age groups and including both prose and poetry; *Field Trips to Health and Welfare Agencies*, which outlines how a successful program of this kind may be set up; and *Student Speakers for Community Chest and Council Interpretation*. This last, based on the theory that "we learn by doing," gives specific help for developing a corps of student speakers to interpret community programs but also to provide active responsible experience in community participation for high school youngsters. Available from Community Chests and Councils, Inc., 155 East 44th St., New York 17, at *15¢* for the reading list and *50¢* for each of the other two.

SHAREHOLDING IN HEALTH

This is the title of the ten year history of the Public Health Lay Council of Montgomery County, Maryland (8720 Bradley Boulevard, Bethesda 14, Maryland). This county, with a 1940 population of nearly 85,000, has had a full-time county health officer since 1923. The present report tells how the Public Health Council has played a part in the development of the county service. It has much to interest other Lay

Health Councils organizing in other counties to crystallize and further the aims of the local health departments.

NORTH DAKOTA HEALTH NEWS

With Volume 1, No. 1 of North Dakota *Health Quarterly News* in March, 1946, North Dakota joined the states whose health departments publish periodically a bulletin in order to acquaint their public with current happenings and future plans.

GROUP PRACTICE OF MEDICINE

Continuing its series of thumbnail histories of current medical-hospital problems, the May *Hospital Survey News Letter* (Commission on Medical Care, 22 East Division Street, Chicago 10) outlines briefly how group practice came into being. The résume points out both the advantages and problems of this method of providing medical care. It indicates further that the hospital is a natural center in which to organize group practice.

PUBLIC HEALTH PROVING GROUND

Eight Years of Public Health Work, Jones County, Mississippi, 1937–1944, by Dr. Harry E. Handley and Carolina R. Randolph of the Commonwealth Fund (41 East 57th Street, New York 22, 50¢) tells the 8 year story of the health department of this county of about 50,000 population. The department was organized with the help of the Commonwealth Fund which for five years supported the basic budget on an annually decreasing basis while the community learned the value and technique of providing its own services. Since providing the funds for the new health center building in 1942, the Fund has supported special projects only. In 1944 local and state funds were each nearly three times the amount that they were in 1934.

The report includes an appendix of statistical tables giving vital statistics data for varying periods from 1923 to 1944. There can be traced the history of maternal and infant mortality rates, death rates from communicable diseases, and many other relevant items.

CITY-COUNTY COÖPERATION ONCE MORE

Public Management for June reports that in Eugene, Ore., five separate taxing units have set up an informal administrative council to coördinate financial and construction programs for the next 10 years. The five units are the cities of Eugene and Springfield, Lane County, and two school districts. Each of these units will prepare a 10 year program as a basis for an overall study of the combined tax requirements. Initial meetings of the administrative council have indicated the possibility of mutual agreement on personnel policies and the exchange of equipment. The Council will also discuss priorities and methods of financing of the various projects planned.

LOW-COST GUIDANCE MATERIAL

Science Research Associates (228 S. Wabash Avenue, Chicago 4, Ill.) has recently published *The Hundred Best.* It is a list of free and inexpensive guidance material representing 41 vocational fields from accounting to writing, including health. In the latter category is listed the Association's Employment Opportunities in Public Health.

Of the 100 items, including non-vocational material as well, 46 are free; the total cost of all the others is $8.19. The list itself is free to subscribers to the Occupational Information System; to others there is presumably a small charge to cover costs.

KANSAS PUBLIC HEALTH ASSOCIATION

The Kansas Public Health Association at its Annual Meeting in June used ingenious methods to recognize

the contributions to public health of Samuel J. Crumbine, M.D., who was the Pioneer Health Officer of Kansas from 1904 to 1923. The place card reproduced the "Swat the Fly" poster of Dr. Crumbine's 1906 campaign and the death's head common drinking cup representing another of his crusades. He was presented with a reproduction of a brick of a sidewalk in Topeka bearing the slogan "Don't spit on the Sidewalk" representing still another crusade.

RECONVERSION OF WARTIME VOLUNTEERS

The *Survey Midmonthly* (112 East 19th Street, New York) continues to read the pulse of social movements. Its May issue has two articles on volunteers, one by the Editor, Bradley Buell, called "Volunteers Ahoy" and the other "Across the Continent" by Dorothy de la Pole, head of Community Chests and Councils volunteer service.

These two articles, available in an eight page reprint (*10 cents per copy*), were inspired by Citizen Participation in Community Services, a Survey of Volunteer Services in New York City, made by the New York War Fund after V-J day. The findings of this study and Mr. Buell's discussion are valuable to every organization concerned about the future rôle of volunteers. That there is need for volunteers in a peacetime program, that volunteers are available, and that their use requires special planning and coördination are emphasized.

Miss de la Pole's article ranges beyond the New York scene to report volunteer trends the country over, and the new ideas on how to attract and use them in the post-war period.

WORTH ACQUIRING

Routine Admission Chest X-Ray in General Hospitals and *Techniques of Group Chest X-Ray Services*—These two motion pictures on tuberculosis case finding with miniature film mass radiography of the chest have just been completed for the U. S. Public Health Service under the supervision of its Tuberculosis Control Division. They are teaching and orientation films for an audience of professional, technical, or administrative personnel, or trainees, in the fields of public health, medicine, and hospital care. The film prints are 16 mm size, black and white, with sound. Available for short term loan from Tuberculosis Control Division Consultants in the District Offices of the U. S. Public Health Service. Prints may be purchased from Castle Films, Inc., 30 Rockefeller Plaza, New York 20, at *$23* and *$21* respectively.

Veterans on the Move: Report on Transient Veterans is the third bulletin prepared by the National Committee on Service to Veterans (National Social Welfare Assembly). It is a brief outline of community planning and resources necessary to meet the problems of transient veterans. Available from the National Social Welfare Assembly, 1790 Broadway, New York 19. Single copies, *10 cents;* 100 copies or more, *5 cents* plus postage.

The Pale Horseman—Pestilence often aggravated by famine is "The Pale Horseman." The above title is the name of a 16 mm sound film prepared to show the horrors and dangers of disease and famine produced by the past World War. It is an excellent propaganda film for introducing a conference or public meeting to consider famine relief or medical assistance for war ravaged countries. Actual scenes of suffering people and destroyed cities described in the sound accompaniment make up the film.

Running time is 19 minutes. Further information as to rental points, charges, etc., can be obtained from Brandon Films, Inc., 1600 Broadway, New York 19, N. Y.

BOOKS AND REPORTS

All books reviewed in these columns may be purchased through the Book Service. All reviews are prepared on invitation. Unsolicited reviews cannot be accepted.

Prevention, First Aid and Emergencies—*By Lyla M. Olson, R.N. Philadelphia: Saunders,* 1946. 591 pp. Price, $3.00.

Here is a textbook on general first aid that should appeal to any person offering a course in this field for adults. It contains a wealth of information which the author had originally assembled in preparation for lectures and demonstrations given to student and graduate nurses of the Kahler School of Nursing. The treatment accorded the subject matter is, however, of such nature as to indicate broad usage by adult groups interested in a sound educational approach to the solution of first aid problems.

While for the most part the author has emphasized sound preventive methods and first aid care of injuries, the reviewer cannot agree that it is the function of a first aid text to recommend specific forms of medical treatment such as massage, whirlpool baths, infra-red heat, the use of novocain, and surgery. While conceding that the border line between first aid care and remedial medical treatment may occasionally be ill defined in some instances, the reviewer submits that medical therapeutics are still within the province of a textbook of medicine.

The author, however, deserves special commendation for the comprehensive nature of the subject matter touched upon. Especially valuable is the Instructor's Guide and Suggested Readings. Of questionable appropriateness is the section on "The Removal of Stains." This text goes a long way in satisfying the needs of the non-professional first aid student. It will, undoubtedly, come into widespread use in nursing schools, but the reviewer is of the opinion that its use as a textbook by other non-professional persons would be inadvisable.

EARL E. KLEINSCHMIDT

Doctors, Drugs and Steel—*By Edward Podolsky, M.D. New York: Bernard Ackerman,* 1946. 384 pp. 20 illus. Price, $3.75.

This book is indeed an adventure in medicine, which is most attractively written, and has a direct appeal to the layman as well as to the physician. While it is limited in scope, in one volume nevertheless it tells a story of many of the advances which have occurred in medicine during the last few years.

It points out not only some of the past accomplishments in the field of medicine, but anyone reading this volume cannot help but feel the influence of medicine in our world today, and the possibilities which exist in continued medical research. It is indeed a most worth while contribution in our present-day thinking regarding the relation of medicine to our national well-being.

T. LYLE HAZLETT

Job Placement of the Physically Handicapped—*By Clark D. Bridges. New York: McGraw-Hill,* 1946. 329 pp. Price, $3.50.

This book as the author states has been written for the layman whose duties include responsibility for the effective use of workers. As such it is intended for the employer, the super-

visor, the personnel manager, the safety engineer, and others who hire, select, place, and supervise man power. A practical guide to constructive action in the rehabilitation and employment of disabled and handicapped workers is also presented by the author.

The first part of the book is devoted to a presentation of the most recent development in matching the worker with the job; the second part of the book contains a discussion in nontechnical language of the more common disabilities and a description of the restrictions imposed upon the worker by each disability. If this book were read by both the industrial placement officer and the physician, each would have a better understanding of the other's problems, procedures, and terminology. Valuable reference material is included throughout the text, as well as in the appendix.

LOUIS LONG

Manual for Water Plant Operators—*By A. A. Hirsch. Brooklyn: Chemical Publishing Co.,* 1945. 368 pp. Price, $6.50.

The author is to be commended for including a great deal of information in a brief space, in language readily understandable by the average water plant operator. Clarity of discussion, however, is at times sacrificed for brevity. Section 4 on the distribution system has little to do with operation problems and could be eliminated. The chapters on plant arithmetic, factors and water plant data are excellent as is the one on the value of maintaining complete records.

Some errors and omissions can be noted. The discussion of filtration is limited to control of rapid sand filtration, although pressure and slow sand filters are still used. The section on chlorination is based on a misconception of the value of active as compared with combined chlorine residual. Use of carbon for taste and odor control is stressed to the neglect of other methods. The author states that manganese interference with the OT test may be determined by boiling the sample or by allowing a portion to stand overnight for dissipation of chlorine residual, two methods that give inaccurate results. Chapter 21 on operation during war emergencies seems out of date; much more information should be given on protection from damage caused by natural disasters.

F. W. GILCREAS

The Origin and Development of Group Hospitalization in the United States, 1890–1940—*By J. T. Richardson, Ph.D. Columbia: University of Missouri,* 1945. 101 pp. Price, $1.25.

Present-day Blue Cross hospitalization plans had their origin in industrial and single hospital plans in the period 1890 to 1928. As the lumbering, mining, and railroad industries made their way into the western states during the latter part of the 19th century they carried with them large populations into areas with very little provision for care of the sick. The construction as well as maintenance of hospitals was financed by contributions from all employees through mutual benefit associations. Typical of the single-hospital plan is that of Baylor University Hospital which in 1929 contracted with 2,000 Dallas, Texas, school teachers to provide hospital care at the annual rate of $6 per person.

When it became apparent that single-hospital plans could not extend their facilities to large segments of the public, non-profit plans embracing many hospitals were organized. The modern Blue Cross plans began in 1937 with the endorsement of the American Hospital Association and the organization of the Hospital Service Plan Commission which coördinates the Blue Cross plans of different communities and spark-plugs research and experimentation in group hospital care.

As recently as 1926 the American

Medical Association branded group hospitalization as "unethical," "not economically sound," and an effort to "profiteer by vending hospital services." The attitude of the medical profession has been progressively more favorable, however, and in 1942 hospital service insurance was formally endorsed by the American Medical Association.

DEAN ROBERTS

Our American Babies—*By Dorothy V. Whipple, M.D. Boston: M. Barrows & Co.*, 1944. 367 pp. Price, $2.50.

This is a delightful and instructive book with many helpful charts and illustrations. It should be exceedingly useful to inexperienced parents because of the author's ability to illustrate by anecdote the principles of baby care. Problems previously unfamiliar to them are presented so vividly that many will be spared the pain of learning through their own errors—if they read this inspirational and educational book.

Although the age period covered is limited to children under 2 years, the fundamentals of child management are so clearly stated that the book will be of interest also to parents of older children and to other persons working with children of more than 2 years. Moreover, the closing chapters on illnesses and accidents make a good practical handbook for any parent.

As this book was completed in November, 1943, it is not surprising to find comments regarding "A Victory Baby." These comments are still of value because they emphasize fundamentals of good baby care. The chapter on "Cost of Having a Baby" may already be out-of-date.

The particular value of this book for parents lies in Dr. Whipple's belief in the baby's "cosmic assignment"—his need to "unfold" under parents' watchful care. As Dr. C. Anderson Aldrich has said in the Introduction, "It breathes an attitude of respect and tolerance for the development of children which is based on scientific research as well as sentiment." This book is highly recommended for young or inexperienced parents.

MARTHA L. CLIFFORD

Professional Nurses—*U. S. Department of Labor, Women's Bureau, Bulletin 203, No. 3. Washington: U. S. Govt. Ptg. Office*, 1946. 66 pp. Price, $.15.

This forecast of post-war employment opportunities for professional nurses, based on a very carefully documented, statistical review of the nursing situation during the last five years, is of importance to all those planning recruitment programs, expanding educational facilities, or attempting to select a subject for specialized study. Counselors and educational directors, to say nothing of writers and speakers, wishing to secure data on the supply and distribution of professional nurses, will find all of the material useful.

The sections (pages 19–21) "Opportunities for Women with Special Employment Problems," and the outlook for employment in the major fields (pp. 28–46) are of interest to all nurses. The estimated need for public health nurses is 69,000 to serve a population of 138 million (p. 33).

DOROTHY DEMING

Ethics for Modern Nurses—*By Katherine J. Densford, M.A., R.N., and Millard S. Everett, Ph.D. Philadelphia: Saunders*, 1946. 260 pp. Price, $1.75.

Primarily written as a textbook for student nurses, the material in this volume is presented in two parts: Part I, Student Adjustments, and Part II, Personal, Professional and Social Ethics.

With the exception of Chapters 1 and 2, Part I will be helpful in orienting the nurse to the very different en-

vironment of the hospital and to the profession of nursing. Chapters 1 and 2 contain information that should be available to every nurse before she takes the important step of entering a school of nursing.

Part II includes an excellent discussion and summary of five philosophies of life and the moral principles involved in purposeful, satisfying, and useful living.

This book has no pat answers for specific problems but, far more important, it sets forth basic principles to enable the student to think through the many perplexing situations she will confront in her profession as well as those she will meet as a member of modern society. The last chapters of Part II are devoted to a discussion of the application of these principles to a few nursing and medical problems. At the end of each chapter there are many excellent questions for discussion and well chosen short lists of supplementary reading.

Although written as a textbook for student nurses, Part II is recommended reading for all nurses. It will reaffirm the premise that nurses have always subscribed to, namely, that they have an important rôle to play in bringing about better health and happiness for all the people. RUTH FISHER

Official and Tentative Methods of Analysis of the Association of Official Agricultural Chemists *(6th ed.)—Washington (P. O. Box 540): Association of Official Agricultural Chemists,* 1945. 932 pp. Price, $6.25 Domestic; $6.75 Foreign.

The sixth edition of the "Book of Methods" is a conspicuous example of progress despite the war years, and brings up to date the standardization of analytical, chemical, and microbiological methods for the examination of agricultural and related articles of commerce. The compilation is not the selection of methods by one author, but rather the result of a well organized program founded upon years of experience and collaborative research work to prepare methods of such accuracy that the determinations obtained thereby will be acceptable in court.

The methods deal predominately with the examination of foods and closely related materials, 93 pages being devoted to drugs and 5 to cosmetics. The procedures are designed to prevent and/or to control the sale of dangerous foods, drugs, and cosmetics, and to correct fraud and filth abuses in connection with the manufacture and sale of these items. Nutritionists are fully aware of our daily dependence upon the food producer, packer, and distributor for quality in foods. They know too of the meritorious part played by the methods of analysis to protect both the consumer's health and his purse. The proper use of these methods reveals facts which determine whether or not the foods and drugs are dangerous to use, are partially decomposed, are deceptive or inferior to the standard, or are substitutes for another article. Furthermore, these disclosures make possible the fulfillment of the requirement that foods must be labelled truthfully, giving the name of the article, or in the case of a mixture for which there is no recognized definition, a list of the ingredients therein.

In addition to the subjects for which methods have been outlined previously, the book now includes methods for the examination of certain Cosmetics; Enzymes; Gelatin, Dessert Preparations, and Mixes; Vitamin Preparations; and Extraneous Matter (Filth, Insects, Insect Parts, and Insect and Rodent Excreta) in Foods and Drugs. Among the methods for the determination of vitamins are procedures for vitamin A, thiamin hydrochloride, riboflavin, niacin, vitamin C, vitamin D, and vitamin K. The Microbiological Methods have been expanded to include procedures

for the examination of nuts and nut products, canned vegetables and canned fruits and other acid canned foods. Sanitarians and nutritionists will be particularly interested in the new chapter for the detection of filth and extraneous matter applicable to canned citrus juices; tea; leafy crude drugs, and condiments; cocoa, imitation cocoa, and cocoa substitutes; cheese; dried milk; cream; evaporated and condensed milk; butter; shelled nuts; peanut butter; baked goods; prepared cereals; flour and meals; alimentary pastes; eggs and egg products; apple butter; fresh, frozen, and canned fruits; candy and sugar products; tomato and other vegetable materials, canned, frozen or dried; pickles and relishes; mayonnaise and salad dressings; manure fragments in dairy products; and urine stains (chiefly of rodent origin) on textile food containers.

A. H. ROBERTSON

A Malariologist in Many Lands—*By Marshall A. Barber. Lawrence, Kans.: University of Kansas Press,* 1946. 158 pp. Price, $2.50.

Should one attempt selling medical entomology to a group of freshmen college students, here is perhaps the best inducement that could be offered. Concentrated in this volume is the history of a medical entomologist than whom few can claim fuller lives.

Much more than a sales talk for medical entomology is presented. It is more than an autobiography. Dr. Barber, in his foreword to the book, states, "This book aims to give, in simple form, some account of my antimalarial work in various parts of the world. . . . I have included here only such details as may help to clarify the main topic—malaria, its prevalence and prevention, in various parts of the world."

This is not a textbook. It does not attempt mosquito classification or explanation of malaria control methods. Rather, it covers highlights of medical and entomological aspects of the malaria problems in various parts of the world—from the United States to Malaya, Greek Macedonia and Brazil, with frequent stopping places in between—and indications of the general control program.

For the experienced malariologist this should prove enjoyable reading recalling various important facts of malaria control. To the layman in malaria control it should serve as general introduction to the study of malariology or a background of information concerning the basic factors involved in malaria control.

FRANCIS B. ELDER

Living in Our Communities—Civics for Young Citizens—*By Edward Krug and I. James Quillen. New York: Scott, Foresman and Company,* 1946. 612 pp. Price, $2.64.

This is a textbook in civics for ninth graders. At first glance it would seem to be a little remote from the interests of the public health worker. But the publisher did not go far wrong in sending the *Journal* a review copy. For one thing, it is good to know and use the fine things that are being done by our professional colleagues in other fields. This book has a wealth of suggestive material valuable for the health educator, the public health nurse, or anyone in the health department whose kit of tools must include teaching techniques.

In the second place, the two chapters on Keeping People Healthy and Maintaining Safety are acutely relevant to our own problems and, like other chapters, excellent. For example, the historical background for safe water supplies is sketched, the engineering feats that go into a great metropolitan water system, as well as its counterpart in the small community. Modern health centers, clinics, schools, hospitals,

health departments, and local government are all related to the job of keeping healthy. "Keeping healthy seems at first just a personal matter—but as we get into the subject we see that family, neighborhood and community have a great deal to do with health."

Each chapter includes further reading lists; suggestions of careers in each field are discussed and the kind of training needed set forth—all in terms of the everyday life of the average youngster. There are illustrative selections from literature, serious and not so serious, classic and modern, pictures (from Grant Wood to comic strips), maps, charts, and pictographs. If you want to see what modern education can do by way of relating life and learning, an hour or two with this textbook will delight both your mind and your eye.

MARTHA LUGINBUHL

BOOKS RECEIVED

Listing in this column acknowledges the receipt of books and our appreciation to the senders. Space and the interests of readers will permit review of some, but not all, of the books listed.

ABRIDGED APPRAISAL OF TUBERCULOSIS CONTROL ACTIVITIES. Orange County, New York, 1944–1945. 36 pp.

ACETANILID: A CRITICAL BIBLIOGRAPHIC REVIEW. By Martin Gross, M.D. New Haven, Conn.: Hillhouse Press, 1946. 155 pp. Price, $3.00.

ALCOHOLISM IS A SICKNESS. By Herbert Yahraes. New York: Public Affairs Committee, Inc., 1946. 32 pp. Price, $.10.

ALCOHOL SCIENCE AND SOCIETY. (Twenty-nine Lectures with Discussions as given at the Yale Summer School of Alcohol Studies.) New Haven: Quarterly Journal of Studies on Alcohol, 1945. 473 pp. Price, $5.00.

THE AMERICAN POCKET MEDICAL DICTIONARY. Edited by W. A. Newman Dorland, A.M., M.D. Philadelphia: Saunders, 1946. 1061 pp. Price, $2.00.

AMERICAN STANDARDS ASSOCIATION—1945–46 YEAR BOOK. New York: American Standards Association. Free from publisher.

ANIMAL LIFE IN PERCOLATING FILTERS. By T. G. Tomlinson, M.Sc., M.Inst.S.P. London: His Majesty's Stationery Office, 1946. 19 pp. Price, Ninepence net.

AN OUTLINE FOR TEACHERS. By Gladys Sellew, R.N., Ph.D. Philadelphia: Saunders, 1946. 58 pp.

AQUATIC STANDARDS FOR Y.M.C.A. CAMPS. By Thomas Kirk Xureton, Jr., and Richard H. Pohndorf. New York: Association Press, 1946. 74 pp. $.75.

CARDIAC CONDITIONS—GUIDE FOR PUBLIC HEALTH NURSES No. 4 (rev.). Department of Educational Nursing. New York: Community Service Society, 1946. 14 pp. Price, $.10.

DRAINAGE FOR HEALTH IN THE CARIBBEAN AREA. By E. G. Magoon. Havana: Compania Editora de Libros y Folletos, 1945. 556 pp.

FOLKS DO GET BORN. By Marie Campbell. New York: Rinehart & Company, Inc., 1946. 245 pp. Price, $3.00.

FOOD BUYERS INFORMATION BOOK. By Alexander Todoroff. Chicago: The Grocery Trade Publishing House, 1946. 380 pp. Price, $4.00.

A GUIDE TO PSYCHIATRIC REFORM. By William F. Burke, Jr.. New York: William-Frederick Press, 1946. 15 pp. Price, $.25.

HEALTH EDUCATION IN RURAL SCHOOLS AND COMMUNITIES. By Nina B. Lamkin. New York: Barnes, 1946. 209 pp. Price, $2.50.

HOW TO READ STATISTICS. By R. L. C. Butsch, Ph.D. Milwaukee: Bruce Publishing Co., 1946. 184 pp. Price, $2.50.

IN BEHALF OF THE YOUTH OF THE WORLD. Conclusions and Resolutions—Adopted by the International Labor Conference in the Twenty-Seventh Session, Paris, France, October 15 to November 5, 1945. United States Department of Labor, Children's Bureau Publication 315, 1946. 24 pp. Price, $.10.

INDUSTRY TUBERCULOSIS SILICOSIS AND COMPENSATION. Edited by Leroy U. Gardner. New York: National Tuberculosis Association, 1945. 126 pp. Price, $2.00.

INTO THE FREEZER—AND OUT. By Donald K. Tressler, Ph.D., Clifford F. Evers, B.S., and

Lucy Long. New York: Avi Publishing Co., 1946. 223 pp. Price, $2.50.

KATHERINE KENT. By Mary Sewall Gardner, A.M., R.N. New York: Macmillan, 1946. 298 pp. Price, $2.75.

LADY IN WAITING. By Rory Gallagher. (6th printing.) New York: Stephen Dye Press, 1945. 243 pp. Price, $2.50.

LIVING IN OUR COMMUNITIES. By Edward Krug and I. James Quillen. Chicago: Scott, Foresman, 1946. 612 pp. Price, $2.64.

MANSON'S TROPICAL DISEASES. Edited by Philip H. Manson-Bahr. (12th ed.) Baltimore: Williams & Wilkins, 1945. 1068 pp. Price, $12.00.

MANUAL FOR RED CROSS HOME NURSING COMMITTEE CHAIRMEN. Organization and Functions of the Red Cross Home Nursing Committee. Washington: American National Red Cross, 1946. 64 pp.

A MANUAL OF TUBERCULOSIS—CLINICAL AND ADMINISTRATIVE. By E. Ashworth Underwood, M.A., B.Sc., M.D., D.P.H. (3rd ed.) Baltimore: Williams & Wilkins, 1945. 524 pp. Price, $4.50.

MARINE MICROBIOLOGY. By Claude E. Zobell, Ph.D. Waltham, Mass.: The Chronica Botanica Co., New York: G. E. Stechert and Co., 1946. 240 pp. Price, $5.00.

MATERNITY HOMES FOR UNMARRIED MOTHERS. By Maud Morlock and Hilary Campbell. Washington: U. S. Gov. Ptg. Office, 1946. 94 pp. Price, $.20.

MEDICAL EDUCATION AND THE CHANGING ORDER. By Raymond B. Allen, M.D., Ph.D. New York: The Commonwealth Fund, 1946. 142 pp. Price, $1.50.

MICROBIOLOGY FOR NURSES. By Mary Elizabeth Morse, M.D., and Martin Frobisher, Jr., S.B., Sc.D. (7th ed.) Philadelphia: Saunders, 1946. 521 pp. 214 illus. Price, $3.00.

NEUROSIS AND THE MENTAL HEALTH SERVICES. By C. P. Blacker, M.A., M.D., F.R.C.P. New York: Oxford University Press, 1946. 218 pp. Price, $5.00.

PERSONAL HYGIENE APPLIED. By Jesse Feiring Williams, M.D., Sc.D. (8th ed.) Philadelphia: Saunders, 1946. 564 pp. 156 illus. Price, $2.50.

THE PREVENTION OF COMMUNICABLE DISEASES. Department of Education. Baltimore: Division of Health and Physical Education, 1946. 37 pp.

POSTWAR VENEREAL DISEASE CONTROL. Supplement No. 20 to The Journal of Venereal Disease Information. Federal Security Agency, U. S. Public Health Service. Washington: U. S. Gov. Ptg. Office, 1945. 213 pp. Price, $.35.

PUBLIC HEALTH—A CAREER WITH A FUTURE. New York: American Public Health Association, 1946. 29 pp. Price, $.10.

THE PUBLIC HEALTH NURSE AND YOU. U. S. Public Health Service. Washington: U. S. Gov. Ptg. Office, 1946.

PUBLIC HEALTH NURSING IN SYPHILIS AND GONORRHEA. By Evangeline Hall Morris. Philadelphia: Saunders, 1946. 239 pp. 18 illus. Price, $2.25.

QUALITATIVE ORGANIC MICROANALYSIS. By Frank Schneider, Ph.D. New York: Wiley, 1946. 218 pp. Price, $3.50.

SCHOOL BOARDS IN ACTION. 24th Yearbook. American Association of School Administrators. Washington: American Association of School Administrators, 1946. 413 pp. Price, $2.00.

SCHOOL BUS STANDARDS. 1945 (rev. ed). Washington: National Commission on Safety Education, 1946. 54 pp. Price, $.30.

SOCIOLOGY AND SOCIAL PROBLEMS IN NURSING SERVICE. By Gladys Sellew, B.S., R.N., Ph.D. (2nd ed.) Philadelphia: Saunders, 1946. 379 pp. 49 illus. Price, $2.75.

STUDIES ON BRAZILIAN ANOPHELINES FROM NORTHEAST AND AMAZON REGIONS. By L. M. Deane, O. R. Causey and M. P. Deane. Baltimore: The Johns Hopkins Press, 1946. 58 pp. Price, $1.10.

TEXTBOOK OF BACTERIOLOGY. By Edwin O. Jordan, Ph.D., and William Burrows, Ph.D. (14th ed.) Philadelphia: Saunders, 1946. 909 pp. 242 illus. Price, $7.00.

TOPLEY AND WILSON'S PRINCIPLES OF BACTERIOLOGY AND IMMUNITY. 2 Vols. (3rd ed. rev.) Baltimore: Williams & Wilkins, 1946. 2054 pp. Price, $12.00.

TUBERCULOSIS AND INDUSTRIAL EMPLOYMENT. Prepared by Oscar A. Suder, M.D. New York: National Tuberculosis Association, 1946. 15 pp. $.10 each for 10 or more.

WATER TREATMENT AND PURIFICATION. (2nd ed.) By William J. Ryan. New York: McGraw-Hill, 1946. 270 pp. Price, $7.50.

WOMEN IN INDUSTRY. By Anna M. Baetjer, Sc.D. Philadelphia: Saunders, 1946. 344 pp. Price, $4.00.

YOU AND YOUR CITY. United States Conference of Mayors. 40 pp.

YOUR HEALTH AND SAFETY. By Jessie Williams Clemensen and William Ralph Laporte. New York: Harcourt Brace, 1946. 592 pp. Price, $2.12.

A SELECTED PUBLIC HEALTH BIBLIOGRAPHY WITH ANNOTATIONS

RAYMOND S. PATTERSON, PH.D.

"White Females" and Other Interesting Statistics — Breathes there the health man with soul so surfeited who never to himself hath exclaimed, now there's an interesting statistic! For the first time the expectation of life passed the 65 year mark (in 1944). For white females the average expectancy was 68.95 years, while for those white females who had reached their first birthday the average had increased to 71. There is a wealth of other challenging statistical comparisons for you.

ANON. Longevity of the American People in 1944. Stat. Bull. (Met. Life Ins. Co.) 27, 5:1 (May), 1946.

Indolent Tuberculosis — Or Patient?—Every health worker who lends his voice to the "early discovery—early recovery" chorus owes it to himself to read this quoted British editorial. It's about the indolent early cases that fail to recover early.

ANON. Indolent Early Tuberculosis. Pub. Health Rep. 61, 23:821 (June 7), 1946.

Anti-Gunn-Platt—From the man who made the pioneering study which engendered the National Health Council comes the opinion that complete amalgamation of all voluntary health agencies is as impractical now as it was deemed to be a quarter century ago. I wish he might have argued with less passion such questions as the blighting effect of ponderous bigness, or the meek little man's resentment against high-pressured chest drives (so appropriately named!) or the utter impracticability of preventing some upstart American Liver-and-Lights Association from seeking funds when all the established agencies had been amalgamated out of the public's sight and sympathy. When a writer damns contrary opinion as communistic, the reader wonders whether the debator's arguments are as sound as he, the bystander, suspects they might be.

ARMSTRONG, D. B. Facts and Fallacies in the Integration of National Voluntary Agencies. J.A.M.A. 131, 7:587 (June 15), 1946.

One for the Weak Side—Statistical evidence suggests the efficacy of BCG vaccination for the first six years (among American Indians) and implies that this vaccine might be of use among other infected groups where there is little chance of isolation. Such groups might be nurses in general hospitals and sanatoria where exposure is great and protection difficult.

ARONSON, J. D. and PALMER, C. E. Experience with BCG Vaccine in the Control of Tuberculosis among North American Indians. Pub. Health Rep. 61, 23:801 (June 7), 1946.

Clear and Concise—Unless you are sure you are in possession of all that's new about what you used to call catarrhal jaundice you will profit by reading this fine description of this infectious condition caused by a virus that thumbs its nose at chlorine, alcohol, and most other germicides.

CAPPS, R. B. Infectious Hepatitis. Am. J. Nurs. 46, 6:383 (June), 1946.

Epidemic Hepatitis in Whistle-Stop—When 276 persons in a community of 2,800 souls come down with an infectious disease, you really have an epidemic. Water, milk, and food supplies were not incriminated. Seemed to be a matter of personal association between infected and susceptible.

DAVIS, D. J. and HANLON, R. C. Epidemic Infectious Hepatitis in a Small Iowa Community. Am. J. Hyg. 43, 3:314 (May), 1946.

Official Report on That Demonstration—Short-time programs of mass venereal disease testing are helpful in reducing current infections and good residual effects are evidenced by the continuing load on clinics and private practices. This is the conclusion of a health officer who tried one.

DIXISON, G. A. and SMITH, W. H. Y. Mass Venereal Disease Control in an Urban Area. South. M. J. 39, 3:195 (Mar.), 1946.

Pioneering Step—How the Maryland State Board of Health carries out the plan for medical care of the medically needy will interest you. Each county has a steering committee, and most have featured bedside nursing services in the program. A study is being made of the calls for nursing care under this scheme.

FISK, H. L. Public Health Nursing in a State Medical Care Program. Pub. Health Nurs. 38, 6:292 (June), 1946.

Most Widespread of All Diseases—Oral hygiene is commonly the stepchild of community health administration or a half-baked dental program is frequently undertaken by some agency outside the official family. So it would seem that health workers generally owe it to themselves to keep their minds open to the problems involved. Here is a keen mind-opener for you.

GETTING, V. A. Fluorine and Dental Caries. New England J. Med. 234, 23:757 (June 6), 1946.

"In Times of Peace . . ."—More evidence of the protective value of influenza vaccine comes trickling through the scientific press. This report is heavily technical (perhaps it only seems so because the office temperature is 90: relative humidity also 90) but from it, we human pincushions will gain some heartening news. One shot gives as good a response as three at weekly intervals.

HENLEY, W., *et al.* Experiments on Vaccination of Human Beings against Epidemic Influenza. J. Immunol. 53, 1:75 (May), 1946.

They Take the Principle for Granted—To his Canadian brethren this English medical officer tells just how Great Britain proposes to go about the provision of hospital, medical, dental, and nursing care for every man, woman, and child in the country without payment of any fee at time of need.

JAMESON, W. Replanning Britain's Health Services. Canad. Pub. Health J. 37, 5:173 (May), 1946.

Parish Councils and Penny Rates—With typical British candor clothed in quiet humor, an English M. O. H. pictures all the the moss-covered anachronisms that persist to the detriment of orderly rural public health administration. Any American writer who aspires to take up pen against our own archaic administrative hodgepodge would be helped as well as entertained by this dissertation on bow-and-arrow defenses against rocket-era health hazards.

MARSDEN, H. E. Some Problems in Rural Public Health. Pub. Health 59, 8:112 (May), 1946.

Dr. Thomas's Splint—If you ever become curious about who the Thomas was who fathered the well known splint, you'll get the information you want here. He came from a line of Welsh farmers, a family with a long history of successful "bone-setting." He did more than perfect the famous device for he did much to counteract the then over-eager amputators.

MCMURRAY, T. P. Thomas and His Splint. Brit. M. J. 4457:872 (June 8), 1946.

It Cost Thirteen Dollars a Head—Apparently healthy adult industrial workers can be given the benefit of preventive health srevices even though they are employed in comparatively small plants. So conclude the directors

of this demonstration who tell how to get results.

MILLMAN, N., *et al.* Coöperative Plan for the Development of a Small Plant Health and Industrial Hygiene Program in New York City. Indust. Hyg. 15, 6:371 (June), 1946.

Baby Boom—Though this paper on population problems does not appear in the scientific press it is technical enough to be dignified by your notice. And it is illuminating too. Here is one sentence: "The point is worth pondering equally by persons who believe that birth rates can be promptly lowered wherever they are high merely by disseminating contraceptive knowledge, and by persons who suppose that birth rates would rebound promptly if only contraceptive knowledge and materials were withheld from the population." What the point is, you must find out for yourself.

NOTESTEIN, F. W. The Facts of Life. Atlantic Monthly 177, 6:75 (June), 1946.

Development of Discoveries of Free Minds—Wartime medical research, employing 1,500 scientists and 4,000 technicians, with a budget of 24 million dollars, centered upon a wide variety of projects. Vaccines for influenza and pneumonia, protection against malaria, fractioning of human blood, perfection of new insecticides, production of penicillin were some. These are the best known, but there were other less obvious benefits that you may want to know about.

RICHARDS, A. N. The Impact of the War on Medicine. Science 103, 2680:575 (May 10), 1946.

Protein vs. Vitamin—"In Europe particularly, the preponderance of calorie and protein deficiency and the rarity of vitamin deficiencies in the civilian populations were striking." This sentence introduces a searching discussion of present-day nutritional problems, and the following sentence ends it: "I believe that (protein) is the major problem of nutrition in clinical medicine today." Vitamin fanciers, please note.

YOUMANS, J. B. Nutrition and the War. New England J. Med. 234, 24:273 (June 13), 1946.

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ASSOCIATION NEWS

SEVENTY-FOURTH ANNUAL MEETING
AMERICAN PUBLIC HEALTH ASSOCIATION
CLEVELAND, OHIO — NOVEMBER 12–14

RAILROAD FARES FROM VARIOUS POINTS TO CLEVELAND, OHIO

American Public Health Association
November 12–14, 1946

From	*One-way for Pullman Travel*	*Round Trip for Pullman Travel*	*One-way Lower Berth*	*One-way Upper Berth*
Atlanta, Ga.	$24.20	$42.70	$6.40	$4.85
Baltimore, Md.	14.14	27.10	3.50	2.65
Boston, Mass.	22.50	41.75	4.95	3.75
Buffalo, N. Y.	6.11	12.05	2.95	2.20
Chicago, Ill.	11.66	22.45	2.95	2.20
Dallas, Tex.	39.62	66.30	10.40	7.95
Denver, Colo.	45.83	73.70	11.30	8.60
Duluth, Minn.	26.70	45.05	6.40	4.85
Fort Worth, Tex.	39.62	66.30	10.40	7.95
Indianapolis, Ind.	9.41	18.35	2.95	2.20
Jacksonville, Fla.	35.86	62.55	9.25	7.05
Kansas City, Mo.	26.44	45.20	6.40	4.85
Louisville, Ky.	12.32	22.90	3.60	2.85
Los Angeles, Calif.	84.48	121.80	20.80	15.85
Memphis, Tenn.	24.86	43.80	6.95	5.30
Milwaukee, Wis.	14.47	26.70	3.60	2.85
Minneapolis, Minn.	25.09	42.65	5.80	4.40
Nashville, Tenn.	18.48	33.20	5.25	4.00
New Orleans, La.	36.25	62.80	9.25	7.05
New York, N. Y.	18.81	35.30	4.35	3.30
Omaha, Nebr.	28.09	47.15	6.40	4.85
Philadelphia, Pa.	15.84	30.15	3.50	2.65
Pittsburgh, Pa.	4.35	8.65	2.35	1.80
Portland, Ore.	82.43	121.80	20.80	15.85
Salt Lake City, Utah	60.93	96.40	14.75	11.25
San Francisco, Calif	84.48	121.80	20.80	15.85
Seattle, Wash.	82.43	121.80	20.80	15.85
St. Louis, Mo.	17.60	33.25	4.35	3.30
Washington, D. C.	14.14	27.10	3.50	2.65
Montreal, Que.	20.50	37.95	4.95	3.75
Halifax, N. S.	41.85	72.55	9.70	7.55
Ottawa, Ont.	18.39	34.20	4.95	3.75
Quebec, P. Q.	26.15	48.10	6.20	5.05
Toronto, Ont.	9.89	18.90	2.95	2.20
Vancouver, B. C.	82.43	121.80	21.20	16.10

NOTE: **Add 15 per cent Government tax to all fares**

RATES QUOTED BY CLEVELAND HOTELS

Seventy-Fourth Annual Meeting, November 12–14, 1946

AMERICAN PUBLIC HEALTH ASSOCIATION

ALL RATES QUOTED ARE FOR ROOMS WITH BATH ON EUROPEAN PLAN

Hotel	*No. of Rooms*	*Single*	*Double*
Alcazar	300	$3.00	$5.00
Allerton	550	2.50–3.00	3.50– 5.00
Auditorium	300	2.00–3.50	4.00– 7.00
Bolton Square	284	2.50–3.00	3.50– 6.00
Carter	600	3.00–6.00	4.50– 9.00
Cleveland	1,000	3.00–7.00	4.50–12.00
Hollenden	1,000	3.00–5.00	4.50–12.00
New Amsterdam	250	2.00–3.00	3.50– 6.00
Olmsted	250	2.00–3.50	3.50– 7.00
Statler	1,000	3.00–6.00	5.00– 8.00
Wade Park Manor	400	3.50–5.00	5.50– 9.00

.....**(Cut off on this line and mail to the hotel of your choice)**.....

HOTEL RESERVATION BLANK FOR THE CLEVELAND MEETING
AMERICAN PUBLIC HEALTH ASSOCIATION, NOVEMBER 12–14, 1946

To .....
(Name of Hotel)

Please reserve for me ..... rooms for ..... persons for the A.P.H.A. Meeting.

Single room ..... Double room .....

Maximum rate per day for room $..... Minimum rate per day for room $.....

I expect to arrive ..... If date of arrival is changed I will notify you at least 24 hours in advance.

Please acknowledge this reservation.

Name .....

Street Address .....

City..... State.....

Mail directly to the hotel of your choice

THE COMMITTEE ON ADMINISTRATIVE PRACTICE REPORTS ON THE 1945 EVALUATION PROJECTS

One hundred schedules were submitted for grading and inclusion in the *Health Practice Indices*. They came from twenty states, one Canadian province, and the Territory of Hawaii. Thirty per cent were from areas which had not previously submitted an *Evaluation Schedule* to the American Public Health Association since the introduction of *Health Practice Indices*. The changing emphasis, with less stress on the grading and more on the use of the evaluation method, was increasingly evident. Information received indicates that a number of states are in the process of arranging their reporting systems to secure the evaluation data currently and will make wide use of the instrument next year.

Schedules were submitted for a variety of purposes. Divisions of Local Health Service were properly responsible for the majority. Several health officers, newly appointed to an area, wanted to establish a base line from which to measure future progress. At least two schedules were directed at the promotion of permanent, county-wide units to replace war emergency departments. Several cities were evidently preparing to reorganize their health protection agencies. A number of areas were measuring progress of special projects outlined in previous schedules.

Working with the schedules created some impressions regarding current public health practice and trends, according to Dr. R. P. Kandle, Associate Field Director, which are of general interest. Diphtheria appeared to have increased. Although devices for determining the level of immunization are still quite inadequate it seems evident that much progress is still needed in providing and maintaining a high level of protection against diphtheria. Pertussis mortality is rapidly decreasing and there would seem to be grounds for real hope that morbidity is coming under substantial control in a few areas. Milk control is making the most rapid progress of any section as judged by the schedules. Housing was, of course, reported as an urgent problem, but the public health aspects did not seem to be adequately stressed. There were, however, excellent exceptions. Accidental death is climbing the ladder among the ten commonest causes, and the need of broad, coördinated control programs with professional guidance and leadership was evident. The handicap to the health officer of not being the registrar and thereby having readily available the vital data of the community was all too evident. The provision of functional public health statistical service by the state health departments to the health units could well be strengthened.

The next edition of *Health Practice Indices* will include data submitted on the 1945 schedules as well as those for 1946.

An Institute on local health administration and the evaluation method was held at the University of North Carolina, March 4–7, 1946, similar to that held at the University of Michigan in 1945. It was attended by representatives from Florida, Georgia, Kentucky, North Carolina, South Carolina, Ohio, and West Virginia.

The Field Staff had the valuable assistance on the grading of Edith M. Boyd, Associate Secretary, Kathryn Richardson of the A.P.H.A. staff, and Erminie Cross Lacey, statistical consultant.

APPLICANTS FOR MEMBERSHIP

The following individuals have applied for membership in the Association. *They have requested affiliation with the sections indicated.*

Health Officers Section

Thurmond D. Boaz, Jr., M.D., Box 97, Jonesboro, La., Director, Winn-Jackson Parish Health Unit

Horace J. Dodge, M.D., M.P.H., Kootenai County Health Unit, Coeur d'Alene, Ida., Director

Marcus H. Flinter, M.D., American Embassy, Tegucigalpa, Honduras, C. A., Director for Honduras, Inter-American Coöperative Health Service

Gerard P. Hammill, M.D., Allegheny County Institution District, Woodville, Pa., Director

George F. Mangone, M.D., 811 Palisades Ave., Union City, N. J., Health Officer

Harry M. Weaver, Ph.D., 120 Broadway, New York 5, N. Y., Asst. to Medical Director, National Foundation for Infantile Paralysis, Inc.

Laboratory Section

Hollis E. Galloway, P. O. Box 464, Cross Plains, Tex., Regional Laboratory Director, Brown County Health Unit

Colonel Karl R. Lundeberg, M.C., 1307 Holly St., N.W., Washington, D. C., Deputy Director, Preventive Medicine Division, War Dept.

Theotonilio Mesquita, M.D., Ave Joao Ribeiro 1491, Aracaju, Sergipe, Brazil, S. A., Bacteriologist, Departmento Nacional de Saude do Brazil

Francisco Ruiz, Calle del Estance del Aguardiente, No. 101, Cartagena, Colombia, S. A., Student, Univ. of Michigan, School of Public Health

Edna Singerman, 323 South Mansfield Ave., Los Angeles 36, Calif., Student, Univ. of California

Orlen J. Wiemann, 241 Lake St., Eau Claire, Wisc., Sanitarian, City-County Health Dept.

Vital Statistics Section

Mary McClure, 1486 Neil Ave., Columbus, Ohio, Inspector, Division of Vital Statistics, State Health Dept.

Engineering Section

Walter G. Atwell, Ph.D., 2323 Humboldt St., Santa Rosa, Calif., Sanitary Engineer, Sonoma County

Major James Bernard Baty, Sn.C., Office of the Surgeon General, 2D-285, The Pentagon, Washington, D. C., Chief, Sanitary Engineering Branch

Fred H. Burley, 9300 West Jefferson, Detroit 17, Mich., Engineer in charge of Sewage Treatment, Dept. of Water Supply

Robert N. Clark, C.E., M.S., Tennessee Valley Authority, Chattanooga, Tenn., Chief Public Health Engineer

Pedrito A. Francois, M.P.H., Box 543, Charlotte Amalie, St. Thomas, Virgin Islands, Public Health Engineer in Training, Univ. of Minnesota

Guy E. Griffin, M.S., American Embassy, Tegucigalpa, Honduras, C. A., Chief Engineer and Associate Chief of Party, Institute of Inter-American Affairs

Carlos da Silva Guimaraes, Rua Humberto de Campos 15, Calvador, Bahia, Brazil, S. A., Chief of Division Technic, Servico de Aguas e Esgotos

Carlos Leopoldo Philipoxsky, M.S., Rua Pres. Pernambuco 132, Belem, Para, Brazil, S. A., Chief of Survey Section, Malaria Control Section, Special Service of Public Health, State of Para

Industrial Hygiene Section

John N. Gallivan, M.D., 74 Connecticut Blvd., East Hartford 8, Conn., Medical Director, United Aircraft Corp.

Food and Nutrition Section

Esther M. Frendberg, 202 Avenue A, Bismarck, N. D., Nutrition Consultant, Division of Maternal and Child Health, State Health Dept.

Robert S. Goodhart, M.D., 150 Broadway, New York 7, N. Y., Scientific Director, National Vitamin Foundation, Inc.

Jeanetta J. Krugg, 6925 Ave. C, Houston 11, Tex., Sanitarian, City Health Dept.

George A. McCaleb, 2533 Sennett, Wichita 9, Kans., Food Sanitarian, City Health Dept.

Tom Douglas Spies, M.D., Nutrition Clinic, Hillman Hospital, Birmingham 3, Ala., Director

Maternal and Child Health Section

Edward M. Bridge, M.D., 219 Bryant St., Buffalo, N. Y., Dept. of Pediatrics, Univ. of Buffalo

Hilda Duffy, R.N., Shabbona, Ill., Consultant Nurse for Maternity Hospitals

Hazel M. Grainger, M.D., 500 W. 11th St., New York, N. Y., Physician, City Dept. of Health

Charles Peltz, M.D., 151 Arlington Ave.,

Brooklyn, N. Y., Child Health Physician, City Dept. of Health

Public Health Education Section

John W. Allen, Ph.G., 120 Broadway, New York 5, N. Y., Regional Director, National Foundation for Infantile Paralysis, Inc.

Janet K. Anderson, M.S.P.H., 17 Beverly Court, Berkeley, Calif., Health Educator, State Dept. of Public Health

James F. Arbuckle, 199 Main St., White Plains, N. Y., Field Representative, National Foundation for Infantile Paralysis, Inc.

Donald W. Barton, 49 Highland Ave., Highland Park, Mich., State Representative, National Foundation for Infantile Paralysis, Inc.

Gladys Black, 1033½ West Central Ave., Albuquerque, N. M., State Representative, National Foundation for Infantile Paralysis, Inc.

Marion C. Browder, 724 Marion E. Taylor Bldg., Louisville 2, Ky., Secy., Kentucky Chapter, National Foundation for Infantile Paralysis, Inc.

Robert A. Burcaw, M.A., 512 Atlantic Life Bldg., Richmond, Va., State Representative, National Foundation for Infantile Paralysis, Inc.

Robert G. Crook, 711 Maple St., Atlantic, Iowa, State Representative, National Foundation for Infantile Paralysis, Inc.

Palmer F. Daugs, 105 North Main St., Lake Mills, Wis., Field Representative, National Foundation for Infantile Paralysis, Inc.

T. Sterling Evans, 307 Security Bldg., Charleston, W. Va., State Representative, National Foundation for Infantile Paralysis, Inc.

Ownie R. Hunter, 104 Perkins St., Leesburg, Fla., Exec. Secy., Lake County Tuberculosis and Health Assn.

Robert W. Jones, 38 Ewing Ave., West Trenton, N. J., State Representative, National Foundation for Infantile Paralysis, Inc.

Joseph F. Kievit, 764 Nevada St., Reno, Nev., State Representative, National Foundation for Infantile Paralysis, Inc.

Mrs. Edward Kircher, 1104 Myrtle Ave., Sanford, Fla., Exec. Secy., Seminole County Tuberculosis and Health Assn.

Anna E. Kothe, 41 Exchange Place, S. E., Atlanta, Ga., Exec. Secy., Georgia State Chapter, National Foundation for Infantile Paralysis, Inc.

Maxine E. Martin, P. O. Box 24, Sebring, Fla., Exec. Secy., Highlands County Tuberculosis and Health Assn.

John V. McCarthy, A.M., 706 40th St., Des Moines, Iowa, State Representative, National Foundation for Infantile Paralysis, Inc.

Frank E. McDonnell, 2909 2nd Ave. North, Great Falls, Mont., State Representative, National Foundation for Infantile Paralysis, Inc.

Frances S. McDowell, Box 47, Route 5, Jackson, Miss., State Representative, National Foundation for Infantile Paralysis, Inc.

Harold C. Mickey, Duke Hospital, Box 3050, Durham, N. C., Superintendent

Sarah Morrison, M.A., Box 264, Hudson Falls, N. Y., Exec. Secy., Washington County Tuberculosis and Health Assn.

George H. Nee, Jr., 10 Post Office Square, Room 1013, Boston 9, Mass., State Representative, National Foundation for Infantile Paralysis, Inc.

Kent H. Powers, 740 McKnight Bldg., Minneapolis 1, Minn., State Representative, National Foundation for Infantile Paralysis, Inc.

John F. Putney, 611 Olive St., St. Louis, Mo., State Representative, National Foundation for Infantile Paralysis, Inc.

Philip S. Randolph, P. O. Box 390, Chapel Hill, N. C., State Representative, National Foundation for Infantile Paralysis, Inc.

William F. Robinson, 620 Midland Bldg., Denver 2, Colo., State Representative, National Foundation for Infantile Paralysis, Inc.

Edna E. Rowell, R.N., 315 Bonita Ave., Panama City, Fla., Exec. Secy., Bay County Tuberculosis and Health Assn.

Lee F. Schmid, 11 North Pearl St., Room 712, Albany 7, N. Y., Eastern New York State Representative, National Foundation for Infantile Paralysis, Inc.

Stanley C. Shaw, 315 North Geneva St., Ithaca, N. Y., Western New York State Representative, National Foundation for Infantile Paralysis, Inc.

William J. Stone, 643 South Grant, Casper, Wyo., State Representative, National Foundation for Infantile Paralysis, Inc.

Donald V. Taverner, 189 Main St., Thomaston, Me., State Representative, National Foundation for Infantile Paralysis, Inc.

James P. Todd, 1 Endlich Ave., Reading, Pa., Venereal Disease Control, State Health Dept.

Allie Belle Trent, 415 Midwest Bldg., Oklahoma City 2, Okla., State Representative, National Foundation for Infantile Paralysis, Inc.

Sam J. Watkins, 607 Boyle Bldg., Little Rock, Ark., Exec. Director, State Chapter,

National Foundation for Infantile Paralysis, Inc.

Louis V. Watwood, P. O. Box 390, Chapel Hill, N. C., State Representative, National Foundation for Infantile Paralysis, Inc.

Kathleen F. Young, M.A., 4160 John R. St., Detroit 1, Mich., Director, School of Nursing, Grace Hospital

Public Health Nursing Section

Jeanne Byers, R.N., House 101, Power, W. Va., County Public Health Nurse

Jessie P. Halbert, 69 East Main St., Meriden, Conn., Exec. Director, Meriden Public Health and Visiting Nurse Assn.

Mrs. O. M. Heiberg, R.N., 222 Lake St., Worthington, Minn., Director, Rural Senior Cadet Nurses Program

Earline Rau, Farm Labor Supply Center, Robstown, Tex., Community Nurse, Texas Farm Laborers Health Assn.

Marian E. Scholfield, R.N., Box 551, Cobalt, Ontario, Canada, Nurse in Charge, Victorian Order of Nurses

Florence N. Udell, 3 Sussex Place, London W 2, England, Chief Nurse, European Regional Office, UNRRA

Helen S. Whitford, Robert Koch Hospital, Koch, Mo., Superintendent of Nurses

Epidemiology Section

James K. L. Choy, M.D., 1008 Kansas Ave., Topeka, Kans., Director, Venereal Disease Control, City Board of Health

Anthony Donovan, M.D., Plaza San Martin 117–205, Lima, Peru, S. A., Surgeon, U. S. Public Health Service, and Traveling Representative, Pan American Sanitary Bureau

Robert E. L. Nesbitt, 1207 Gartland Ave., Nashville, Tenn., Medical Asst., Williamson County Tuberculosis Study

School Health Section

Dortha Berryman, R.N., P. O. Box 17, Cheyney, Pa., Staff Nurse, Sunnycrest Farm for Negro Boys

Thomas B. Godfrey, M.S., 233 East Magnolia, Louisville, Ky., Supervisor of Health and Physical Education, Louisville Public Schools

Edward B. Johns, Ed.D., 2506 Berkeley Terrace, Fresno, Calif., Health Education Consultant, California Community Health Education Project, Fresno State College

Julian S. Martin, Winnsboro, S. C., State Representative, National Foundation for Infantile Paralysis, Inc.

Bruno Tyson, M.D., 295 East 10th St., New York 9, N. Y., School Physician, City Dept. of Health

Dental Health Section

Raymond S. Martin, Jr., D.D.S., 1930 Chestnut St., Philadelphia, Pa., Dental Clinician, Darby Borough School District

Unaffiliated

E. Clinton Belknap, 2019 Harwood, Lincoln 8, Nebr., State Representative, National Foundation for Infantile Paralysis, Inc.

Robert F. Campbell, 1137 E. Jersey St., Elizabeth, N. J., State Representative, National Foundation for Infantile Paralysis, Inc.

Lois A. Dunn, R.N., 5101 39th Ave., Apt. F-24, Long Island City 4, N. Y., Instructor-Supervisor, School of Nursing, Cornell Univ., New York Hospital

Eugene W. Hall, 608 Park Bldg., Portland, Ore., State Representative, National Foundation for Infantile Paralysis, Inc.

Carl R. Jensen, M.A., Montezuma, N. M., District Sanitarian, State Dept. of Public Health

Warden M. Martin, M.A., Interlochen Drive, Lakeland, Fla., State Representative, National Foundation for Infantile Paralysis, Inc.

Fern A. Mosle, Box 240, Rt. 1, Santa Paula, Calif., Interested citizen

William H. Pemberton, Central Bldg., Seattle 4, Wash., State Representative, National Foundation for Infantile Paralysis, Inc.

Manuel Pomar, Marian County Health Unit, Ocala, Fla., Entomological Inspector, U. S. Public Health Service

I. Herbert Scheffer, M.D., 214 W. 91st St., New York 24, N. Y., Medical Supt., Metropolitan Hospital, Welfare Island

Joseph Turner, M.D., 1 East 100th St., New York 29, N. Y., Director, Mount Sinai Hospital

CLOSING DATE FOR ACCEPTING FELLOWSHIP APPLICATIONS

September 1 will be the closing date for accepting applications for Fellowship to be considered at the 1946 Annual Meeting in November. Members who are eligible and are interested in becoming Fellows are urged to submit their applications, completely filled in and sponsored, as far in advance of this date as possible.

EMPLOYMENT SERVICE

The following pages present information for those seeking qualified public health personnel and for those seeking positions in public health.

This is a service of the Association conducted without expense to the employer or employee.

Address all correspondence to the Employment Service, A.P.H.A., 1790 Broadway, New York 19, N. Y., unless otherwise specified.

Positions Available

(Supplemental to list in July Journal)

The Cleveland **Child Health Association**, a member of the Welfare Federation of Cleveland supported by the Community Fund, is seeking woman qualified to head well established prenatal instruction program. The following qualifications have been established: candidate must be registered nurse with college degree and special training in obstetrics and public health. Previous teaching experience and knowledge of sewing preferred. A rapidly expanding program offers unusual opportunities. Salary $3,300 per year plus transportation with month's leave each August. Inquiries may be addressed to Mr. Wirth Howell, Acting Director, Cleveland Child Health Association, 1001 Huron Road, Cleveland 15, Ohio.

Wanted: **Executive Secretary** for voluntary health agency in urban New England community. Duties: program planning, community organization, fund raising. Master's degree and experience required. Salary $3,500–$4,000. **Box S**, Employment Service, APHA.

Wanted: Junior Sanitarian for Department of Health, Jackson, Mich., with degree in an applied science, preferably specialization in public health courses or graduation from college or university of recognized standing and at least 1 year of successful experience in sanitation and public health work, or any equivalent combination of education and experience. Salary range $2,350–$2,560 per year. Apply Civil Service Commission, City Hall, Jackson, Mich.

Wanted: **Director,** Bureau of Vital Statistics. Must have college degree with courses in statistics and at least 4 years' experience in vital statistics work. Preference given to M.D. or Ph.D. in statistics. Write for information to Merit System Supervisor, Florida State Board of Health and Crippled Children's Commission, 201 Professional Bldg., Gainesville, Fla.

Epidemiologist wanted who will also serve as director of Division of Acute Communicable Diseases Control of Department of Public Health, Seattle, Wash. Beginning salary $6,000 plus reimbursement for necessary travel. Apply to Emil E. Palmquist, M.D., Director of Public Health, 300 Public Safety Bldg., Seattle 4, Wash.

Wanted: Physician for director of Division of Maternal and Child Health Service of Department of Public Health, City of Seattle. Applicant must have had specialized training in pediatrics or public health and experience also preferred. Beginning salary $6,000 plus reimbursement for necessary travel. Apply to Emil E. Palmquist, M.D., Director of Public Health, 300 Public Safety Bldg., Seattle 4, Wash.

Wanted: Public health nurses for generalized nursing program. Salary range $210–$240 per month. Under civil service 40 hour week, vacation and sick leave privileges. Address Director of Public Health Nursing, City of Seattle, 504 County-City Bldg., Seattle 4, Wash.

Wanted: Well trained, full-time health officer to direct generalized program of Chippewa Co., Mich. Population 26,000, central office Sault Ste. Marie, population 16,000. County will be combined within year with two adjoining sparsely settled counties, increasing total population to 40,000. Beginning salary $6,000 plus adequate travel allowance. Salary increase at time of merger. Write Russell E. Pleune, M.D., Director, Northern Peninsula Office, Mich. Dept. of Health, Escanaba, Mich.

Resort areas of Michigan need qualified public health nurses to help develop expanding programs of local health departments. Personnel policies written to offer staff members opportunities to enjoy water and woodland sports and outdoor life year round. Positions open immediately for 10 staff nurses at salary range of $2,100–$2,220, 2 senior nurses at $2,400, and 2 supervising nurses at $2,700 to $3,000. Write for personnel form to Director, Northern Peninsula Office,

Michigan Dept. of Health, Escanaba, Mich.

Wanted: Public Health Nurse, age 22 to 45, salary $200 per month and maintenance. Must furnish own car. Ideal working and living conditions. Contact Dr. Paul D. Crimm, Boehne Tuberculosis Hospital, Evansville 12, Ind.

Wanted: Physician to act as health officer in large local department of health in State of Washington. Salary range $5,280 to $6,300, entrance varying with education and experience of candidate. For full details write Dr. Arthur L. Ringle, State Director of Health, Smith Tower, Wash.

Wanted: Experienced sanitarians with college degree to serve in local health departments. Salary range $2,400 to $2,880 entrance, varying with education and experience of candidate. Opportunities of advancement to Senior Sanitarian with salary range $2,760 to $3,360. For full details write Dr. Arthur L. Ringle, State Director of Health, Smith Tower, Seattle, Wash.

Hawaii Board of Health wants 1 psychiatrist to direct bureau of mental hygiene. Salary $645 to $728.33 plus $45.00 bonus. Certification by the American Board of Psychiatry and Neurology or sufficient training and experience to be eligible for such certification required; 1 Pathologist to direct Bureau of Laboratories. Salary $645 to $728.33 plus $45 bonus. Must have 3 years' experience in pathology of which 2 years shall include administrative responsibility for work of recognized laboratory engaged in diagnosis and control of human diseases, graduation from medical school of recognized standing and 2 years' specialized training in pathology; 1 Pediatrician to assist in direction of programs of maternal and child health and of crippled children. Salary $520 to $620 plus $45 bonus. Must be certified by American Board of Pediatrics or have sufficient training and experience to be eligible for such certification. Write to Board of Health, Territory of Hawaii, P. O. Box 3378, Honolulu 1, T. H. Use 15¢ Clipper Mail.

Territorial Department of Health, Juneau, Alaska, wants public health staff nurses. Minimum salary $245 Southeastern, $281.75 Interior. Minimum qualifications: year of public health in school of nursing approved by NOPHN and 2 years' experience, one of which has been under qualified supervision, preferably in VNA or rural public health. Vacation 1 month, 14 days sick leave, 38 hour week. Apply directly to Director, Division of Public Health Nursing, Box 1931, Juneau, Alaska.

Wanted: Graduate in chemistry, chemical engineering or sanitary chemistry with experience in sewage treatment plant laboratory or similar field for position as chemist. Some experience or training in bacteriological work also desirable. Starting salary $3,200. Newly organized research project, Eastern U. S. Apply **Box R,** Employment Service, APHA.

Wanted: Physicians for health officer positions in county and district health departments in Oklahoma. Salary range according to public health training and experience $4,800 to $6,600 plus travel. Beginning salary with no previous training or experience $4,200 to $4,800 plus travel. Address Commissioner of Health, Oklahoma State Dept. of Health, Oklahoma City 5, Okla.

Health Directors. Two qualified physicians to direct public health programs of counties coöperating with W. K. Kellogg Foundation in Southwestern Michigan. These counties are part of a field training area of Michigan Department of Health. Maximum salary $7,200 plus travel allowance. Write M. R. Kinde, M.D., Director, Division of Public Health, W. K. Kellogg Foundation, Battle Creek, Mich.

Public Health Engineers. Two public health engineers to direct environmental health programs in counties coöperating with W. K. Kellogg Foundation in Southwestern Michigan. These counties are part of a field training area of Michigan Department of Health. Maximum salary $3,600 plus travel allowance. Write M. R. Kinde, M.D., Director, Division of Public Health, W. K. Kellogg Foundation, Battle Creek, Mich.

Wanted: Physicians trained in school of public health and with public health experience for key positions in Latin-American Republics. For particulars communicate with Personnel Director, Office of Inter-American Affairs, 499 Pennsylvania Ave., N.W., Washington 25, D. C., sending brief outline of qualifications.

Wisconsin Needs District Health Officers. Salary $4,320–$4,920 and travel expenses. Write State Board of Health, Madison 2, Wis., giving training, age and experience.

Wanted: Two public health nurses for county health unit in attractive resort area. Population 61,000 with two urban areas of 15,000 and 8,000. Generalized

public health nursing service with staff and 7 field nurses. Salary range $2,100 to $2,600 annually depending upon experience and education. Own car essential with travel allowance of 5¢ per mile up to $600 per year. Apply Director Ottawa Co. Health Dept., Grand Haven, Mich.

Wanted: **Full-time public health nurses.** Applicant should state age, year of graduation, school and any training she has had. Apply Fresno Co. Health Dept., Room 203, Courthouse, Fresno, Calif., for further information.

Wanted: **Medical Director or Associate** for national voluntary health agency. Physician with public health experience sought for agency affiliated with National Health Council. Qualifications include administration, planning, speaking and interpretation, ability to gain greater cooperation from medical schools, hospitals, public health agencies; willingness to travel; 35 to 60 years of age. Salary commensurate with past experience and demonstrated abilities. Send photograph and full outline of medical education, experience, family status, salary requirements, to **Box I,** Employment Service, APHA.

Wanted: **Public health nurse** with special training in health education at a salary of approximately $3,100; also public health nurse for cancer program at salary of $3,300. Must have degree; be able to speak in public; must own car—gasoline and oil furnished. Eastern U. S. Apply **Box T,** A.P.H.A.

Wanted: **Health Officers for Florida:** Younger men preferred. Liberal travel allowances in addition to salary as given below. State has liberal retirement plan. Bay County, Panama City county seat. Fast growing community on St. Andrews Bay and Gulf Coast. Salary $6,000. Charlotte-DeSoto-Sarasota Counties (one unit). Main office, Sarasota. Lower Gulf Coast, tourist, citrus, farming and fishing industries. Salary $6,000. Gadsden-Calhoun-Liberty Counties (one unit). Main office, Quincy. Progressive community, thirty miles from state capital, near Gulf Coast region. Population largely rural. Salary $6,000. Holmes-Okaloosa-Walton Counties (one unit). Main office, DeFuniak Springs. Region borders on Gulf Coast in western part of State. Population largely engaged in farming, fishing, and timber industries. Salary $6,000. Leon County, Tallahassee, state capital, county seat. Governmental center in progressive agricultural area. Salary $6,000. Levy and Citrus Counties (one unit). Main office, Bronson, Gulf coastal region, Central Florida, rural area, farming, fishing, lumber and naval stores leading occupations. Salary $5,700. For application form, and further information, communicate with Merit System Supervisor, 201 Professional Building, Gainesville, Fla.

Wanted: Public health nurses for Columbia and Hamilton Counties of Florida. These two health units are along the banks of the Suwannee River and are interesting places to work. Starting salary $160 per month with experience, $170 for those with training, and $180 for trained nurses. Mileage at 7½ cents per mile. Must own car. Write to Health Officer, Northern Florida Health District, Lake City, Fla.

Wanted: Public health nurses in new county health department in center of Florida's citrus region. Salary dependent upon qualifications and experience. Supervisor of Nurses, $230 to $270 per month. Staff Nurses, $170 to $200 per month, plus liberal travel allowance. Apply, Director, Polk County Health Department, P. O. Box 819, Bartow, Fla.

POSITIONS WANTED

Physician, public health and administrative experience, considerable experience as medical examiner, seeks part-time position with city or state health department or industrial concern as preëmployment examiner and health supervisor, New Orleans area. **A-518**

Dentist, 30 years in practice, 13 years in public health work. Several years' executive experience. Now chief of large dental department in southern state hospital. Desires position in southwestern state tubercular or mental hospital, or in other public health dental institution. Available after November 30. Write **M-465,** Employment Service, APHA.

Senior Bacteriologist, Ph.D., well known teacher and investigator with industrial experience, seeks position in university, hospital, consulting or manufacturing organization. **L-462**

D.D.S., Veteran, 11 years' practical experience. M.P.H. expected 1946. Wishes administrative position in public health administration. **M-464**

Advertisement

Opportunities Available

WANTED—(a) Director of medical and health service, national organization; duties consist of administering and planning medical service of eastern area; physician with administrative experience in public health required. (b) Municipal health director; town of 60,000; must be competent administrator; South. (c) Public health physician to direct medical and surgical service of generalized health program caring for large industrial group. (d) Director of student health; college for young men having enrollment of 800; town of 100,000; East; $5,000 plus apartment on campus for nine-months' college year. (e) Dermatologist to become associated with metropolitan department of health as venereal disease clinician; Middle West. (f) Young woman physician to direct student health department of young women's college, approximately 1,100 students; South. **PH8-1** The Medical Bureau, Burneice Larson, Director, Palmolive Building, Chicago 11.

WANTED—(a) Health educator; municipal department of health; preferably someone experienced with community councils; West Coast. (b) Bacteriologist for appointment with chemical and bacteriological laboratory operated for the control of municipal water supply; duties include research on both chemical and bacteriological problems of water supply; Middle West. (c) Sanitary engineer to join division of engineering and sanitation of county department of health, headquarters in large metropolis; Middle West. (d) Health educator or social worker to take charge of family relations department; department of health of large city in the Southwest; would work closely with the school board; immediately. (e) Health educator; tuberculosis association and city health department; East. (f) Bacteriologist-serologist for position of chief of bureau of laboratories; must be well qualified in public health laboratory work; $3,000. **PH8-2** The Medical Bureau, Burneice Larson, Director, Palmolive Building, Chicago 11.

WANTED—(a) Public health nurse to combine duties with those of school nurse; small town in Wisconsin. (b) Supervisors of staff nurses for generalized program; opportunities, also, for nurses interested in being trained in public health nursing; scholarship available; South. (c) Instructor in community health nursing; state college of nursing; newly created position; must be capable of organizing and developing comprehensive program; $3,000, traveling expenses; East. (d) Two public health nurses; county of forty thousand, lively growing community; excellent cooperation from schools and other local organization; $200; Middle West. (e) Student health nurse; young woman's college located in university center; college training required; position carries faculty status; opportunities for continuing studies; Middle West. (f) Supervisors for venereal disease and tuberculosis divisions of public health department; although basic salary is $2,640, entrance salary depends upon qualifications and experience. (g) School nurse to supervise health among public schools, town of 15,000, Colorado. (h) School nurse; public health training or experience required; duties include supervising group of teachers, town of 10,000, Rocky Mountain area. **PH8-3** The Medical Bureau, Burneice Larson, Director, Palmolive Building, Chicago 11.

Advertisement

Opportunities Wanted

Public health physician; degrees of Doctor of Medicine and Master of Public Health from Middle Western University; has been in full-time health department work since 1939 where his duties have been principally in administrative capacity; age 44; will go anywhere; for further information, please write Burneice Larson, Director, The Medical Bureau, Palmolive Building, Chicago 11.

Bacteriologist; A.B., M.A., Ph.D. degrees; several years' successful teaching and research experience in general, dairy and food bacteriology; past several years, director, bacteriological department, metropolitan department of public health; for further information, please write Burneice Larson, Director, Medical Bureau, Palmolive Building, Chicago 11.

Public health nurse is available for position as director or consultant; B.S. degree in public health nursing; past seven years, educational director and supervisor municipal department of health; experience in public health nursing has been broad and has included teaching all types of classes; for further information, please write Burneice Larson, Director, Medical Bureau, Palmolive Building, Chicago 11.

Sanitarian; B.S., Civil Engineering; M.S., Sanitary Engineering; experience consists of six years as chief operator and bacteriologist of water treatment plant; four years as sanitary engineer for water treatment and sewage treatment plants; recently discharged from military service; for further information, please write Burneice Larson, Director, Medical Bureau, Palmolive Building, Chicago 11.

Health educator; B.S., M.S. and Ph.D. degrees; several years, instructor in biology, bacteriology and health; state university; three years, public health educator, city and county health department; for further information, please write Burneice Larson, Director, Medical Bureau, Palmolive Building, Chicago 11.

Dentist who has been successful in private practice for 12 years is available for position in public health or industry; for five years served as member of state board of dental examiners; for further information, please write Burneice Larson, Director, Medical Bureau, Palmolive Building, Chicago 11.

NEWS FROM THE FIELD

The International Health Conference for a World Health Organization

Plans for the World Health Organization have already been described in the April (p. 426), May (p. 576), and July (p. 825) *Journals*.

The first Plenary Session of the International Health Conference was expected to complete its meetings in New York late in July, after having adopted a constitution for submission to the member nations, and provided for an Interim Health Commission until the World Health Convention comes into force and the World Health Organization is established. It was said to be the largest and most representative international health conference ever held.

The Interim Health Commission will have an Executive Board and a Secretariat, and will serve until the first session of the World Health Assembly. It will formulate recommendations concerning integration in the World Health Organization of the activities of the League of Nations Health Organization, Office International d'Hygiene Publique, and UNRRA and will prepare material for the World Health Assembly.

The Conference had a Committee on Relationship with the United Nations and other Organizations. This committee discussed temporary machinery by which League of Nations health activities could be transferred to the new organization. The draft of the Preparatory Commission recommended by resolution that such machinery be set up to deal with urgent health problems which do not fall within the scope of any existing intergovernmental organization and to avoid duplication of functions. It also recommended the absorption of the Office International d'Hygiene Publique.

This same Committee on Relationship heard Dr. G. Foard McGinness of the International League of Red Cross Societies, Dr. Flores Zorrilla of the International Labor Office, and Mr. Weld of the Provisional International Civil Aviation Organization. Each of these urged the necessity for the closest liaison between the World Health Organization and their agencies. Dr. Flores Zorilla declared "we have to solve all problems together and the ILO has the experience of the past in helping to solve these problems."

The draft Constitution provides that the World Organization will furnish emergency medical facilities to member nations, operate an epidemiological and statistical service for spreading medical information, and assist states in developing a strong public health service and an informed public opinion on health matters.

The Constitution defines as a function of the World Organization "to foster such mental health activities as are necessary to improve and harmonize human relations." This is said to be the first instance in which an international health body will promote psychiatry. It represents an attempt to prevent a new world war by dealing with some of the human tensions that create war.

The Constitution as proposed provides for regional committees to meet the needs of any particular region and to serve as the regional offices of the World organization. One of the knotty problems resolved at the Conference was the relation of existing regional health organizations such as the 45 year old Pan American Sanitary Bureau of

the 21 American republics. This Bureau presently administers the sanitation treaties among the American republics. A considerable opinion in the Americas favored autonomy, with the same kind of close coöperation with the new organization that the Bureau has now with UNRRA and the International Office of Public Hygiene. After four days of debate in the Assembly's Committee on Regional Arrangements it was agreed that the Pan American Sanitary Bureau should be integrated gradually in the new World Health Organization. This integration will require some modifications in the sanitation treaties now existing among the American republics.

Another problem dealt with by the Conference was that of membership by nations other than the 51 United Nations. Fifteen non-member nations were represented at the Conference by non-voting observers. When the *Journal* went to press the exact method by which non-member nations might become a part of the World Health Organization had not been agreed upon but there was general agreement that membership would not be limited to members of the United Nations. Nor had the seat of either the Interim Health Commission or the World Health Organization been determined, nor the date of the first world health Assembly.

The *New York Times* under the caption, "A World War Against Disease" said editorially after the opening session,

"Representatives of sixty-seven nations, fifty-one of them members of the United Nations, met yesterday in this city under U. N. auspices in the largest international health conference ever assembled. They had ambitious aims, the most general of which was 'to contribute to the harmony of human relations.' Since physical and mental health does make for harmony, and since it cannot be brought to all the peoples of the world without some previous harmony, this objective was certainly not out of place.

"Seven general aims and nineteen functions were set forth in the preliminary report looking toward a World Health Organization. The aims boil down into the prevention, control, study and discussion of disease. The functions boil down into cooperation between Governments and among physicians, scientists and health officers; organized research, the exchange of all pertinent information; mutual assistance when needed; and the standardization of practices and products. What emerges is a kind of worldwide public health service, not superseding national and local health services, but binding them together in a global warfare against disease.

"Spain was absent from yesterday's gathering, though her people are just as much interested in fighting disease as those of more fortunate countries. With this exception the meeting reflected and developed no political rivalries. The substance of the report had already been accepted by the Social and Economic Council. No one was worrying about boundaries, for disease—and especially epidemic disease—knows no boundaries. There was a common concern lest the enemy of all humanity gain ground, a common determination to fight against that enemy.

"No doubt our descendants will think of mankind during most of its history, even including our own age of marvelous medical discoveries, as essentially a sick race. Our increasing wealth of knowledge about disease has been only haphazardly applied. Millions upon millions of human beings have suffered from ailments and disabilities that could have been prevented or cured—they still suffer. The genius of whole populations has been thwarted by a lack of energy, a dwindling of ambition, a lessening of hope due to disease. The great gap between the death rates of such countries as India and China and those of North America and Western Europe proves the point.

"The World Health Organization, when it is set up, will not need an international police force to support it. It will not require sanctions. There will probably be no objection in any country to inspectors from other countries who come with the sole purpose of improving a nation's health and saving the lives of its people. Medical science can be put to work, and if it is put to work successfully it may save more human beings than our last two great wars have killed.

"One's heart warms to this project. May it never know the politics, the international rivalries, the suspicions from which yesterday's meeting seemed so free!"

Among the Delegates and Advisers to the World Health Organization were the following Fellows and members of the American Public Health Association:

Fellows

Dr. Geraldo H. de Paula Souza, Brazil (Delegate)
Dr. Guillermo Lage, Cuba (Delegate)
Dr. John West, Liberia (Delegate)
Dr. Alberto P. Leon, Mexico (Delegate)
Sir Wilson Jameson, United Kingdom (Delegate)
Dr. Thomas Parran, United States (Delegate)
Dr. Martha M. Eliot, United States (Delegate)
Dr. James A. Doull, United States (Adviser)
Dr. Robert P. Fischelis, United States (Adviser)
Dr. Abel Wolman, United States (Adviser)
Miss Jean Henderson, United States (Special Assistant to the Chairman)
Dr. H. Jackson Davis, Uruguay (Technical Adviser)
Dr. Morrison Stayer, Germany (Representative, Allied Control Authorities)
Dr. G. Foard McGinnes (Representative, League of Red Cross Societies)
Dr. Hugh S. Cumming (Representative, Pan American Sanitary Bureau)
Dr. George K. Strode (Representative, Rockefeller Foundation)
Dr. John B. Grant (Representative, Rockefeller Foundation)
Miss M. Elizabeth Tennant (Representative, Rockefeller Foundation)
Dr. George Baehr (Representative, UNRRA)
Dr. Wilbur A. Sawyer (Representative, UNRRA)

Members

The Hon. Brook Claxton, Canada (Delegate)
Dr. G. B. Chisholm, Canada (Delegate)
Dr. A. Groulx, Canada (Adviser)
Dr. C. W. MacMillan, Canada (Adviser)
Dr. Szeming Sze, China (Delegate)
Dr. Pedro Nogueira, Cuba (Delegate)
Dr. Vicente Lago Pereda, Cuba (Delegate)
Dr. Luis F. Thomen, Dominican Republic (Delegate)
Dr. Jose Antonio Munoz, Guatemala (Delegate)
Dr. Rulx Leon, Haiti (Delegate)
Dr. Don Octavio S. Mondragon, Mexico (Delegate)
Dr. Miguel Bustamante, Mexico (Delegate)
Dr. Gustavo A. Rovirosa, Mexico (Delegate)
Dr. Carlos Enrique Paz Soldan, Peru (Delegate)
Dr. Hilario Lara, Philippine Commonwealth (Delegate)
Dr. Frank G. Boudreau, United States (Delegate)
Dr. H. VanZile Hyde, United States (Adviser)
Dr. George Lull, United States (Adviser)
Dr. Carlos M. Barberousse, Uruguay (Delegate)
Dr. José Pedro Saralegui, Uruguay (Delegate)
Dr. Alfredo Arreza Guzman, Venezuela (Delegate)
Dr. Hugh H. Smith (Representative, Rockefeller Foundation)

SAFETY ENGINEERING UNIT PROGRAM IN MICHIGAN

The Safety Engineering Program of the Division of Labor for the State of Michigan is under the guidance of Gordon C. Harrold, Ph.D., Chief Safety Engineer, and James Rook, formerly of the Chrysler Corporation, as Assistant Chief, with offices in Detroit and Lansing respectively.

The major effort of the unit is to enlist coöperatively all available aid in the servicing of small as well as large industry to give workers adequate protection. A representative advisory group met in Lansing, Mich., on June 6 and approved the primary program of fostering industrial safety throughout the state. The committee, headed by John L. Lovett, Manager of the Michigan Manufacturers Association, and C. E. Wormuth, Manager of the Detroit Industrial Safety Council, as co-chairmen, is responsible to George W. Dean, the Commissioner of Labor. Plans for a state-wide industrial safety conference to be held in the spring of 1947 are under way. The engineering unit will also render safety engineering technical services at the request of industry and will promote coöperative arrangements with the established Bureaus of Industrial Hygiene. It is also expected that it will be possible to upgrade the factory inspection services for safety measures.

HOPKINS ANNOUNCES NEW ONE YEAR GRADUATE COURSE IN SANITARY ENGINEERING

Sanitary Engineering Bulletin of Johns Hopkins University describes the sanitary engineering courses to be offered this fall at Baltimore. A change in university regulations makes it possible to offer a one year program of study leading to the degree of Master of Science in Sanitary Engineering, with an additional year for the Doctorate.

The work for the Master's degree is divided into two groups: one in sanitary engineering given in the Engineering School and one in public health given in the School of Hygiene and Public Health. The programs leading to either the Master's degree or the Doctorate equip men for professional work in one of the following fields of sanitary engineering: public health, design and construction, industrial hygiene, hydrology, and water conservation.

The *Bulletin* and further details are available from Abel Wolman, Dr.Eng., 211 Latrobe Hall, Baltimore 18, Md. Dr. Wolman is Professor of Sanitary Engineering both in the School of Engineering and the School of Hygiene and Public Health.

LIFE INSURANCE RESEARCH FUND FELLOWSHIPS

The Life Insurance Medical Research Fund reports a new step in support of research in the field of diseases of the heart and arteries. It has awarded nine fellowships—four for postgraduate research, and five for student training.

The senior fellowships are given to graduates who have a doctor's degree in medicine or the related medical sciences. Junior fellowships are awarded to undergraduate students in medical schools who desire to take an extra year for training in scientific research. Fellowships are open to residents of the United States and Canada. Senior fellows usually receive $2,500 to $3,500 a year, while junior fellows are given $1,500 to $2,000 a year.

At the same time announcement was made of 11 new research grants, totalling $162,000 to ten institutions, bringing allocations for research since the Fund started operation last fall to $621,000.

On July 1, the office of the Fund was established at the New York Academy of Medicine, 103rd Street and Fifth Avenue, New York City. Its Scientific Director, Dr. Francis R. Dieuaide, has also become Clinical Professor of Medicine at the College of Physicians and Surgeons of Columbia University.

AMERICAN HEARING SOCIETY

On June 16, the members of the American Society for the Hard of Hearing voted to change the name of the organization to the "American Hearing Society." This change was made for the following reasons:

> Emphasis is placed on *Hearing*. . . . The name is broad and implies that it is not a segregated group but a society whose membership is open to all who are interested in hearing losses or potential losses of hearing. The name is brief and lends itself to publicity purposes. It is positive and appealing.

ARMY COMMENDATION MEDAL TO DR. BERNARD M. BLUM

Bernard M. Blum, M.D., M.P.H., is the recipient of the Army Commendation Ribbon, together with a letter of commendation from General L. R. Groves, Chief of the Manhattan Project. Dr. Blum organized and directed the Health Department for Oak Ridge, Tenn., the largest of the atomic bomb centers which grew in about a year and a half to 80,000 population. General Groves wrote "It gives me great pleasure to commend you for your outstanding services rendered in behalf of the Atomic Bomb Project. In recognition of your exceptional achievement

. . . I am attaching a Certificate of Commendation . . . Your unceasing efforts and devotion to duty contributed, in no small measure, to the successful completion of the Atomic Bomb and its ultimate use against the enemy."

Dr. Blum has returned to his position as District Health Officer in charge of the Washington Heights District, New York City Department of Health, and member of the staff of the School of Public Health, Columbia University.

ANTIBIOTIC STUDY

Dr. R. E. Dyer, Director, National Institute of Health, U. S. Public Health Service, announces the formation of an Antibiotic Study Section. The Chairman is Dr. Hans T. Clarke, College of Physicians and Surgeons, New York. The Secretary is Dr. C. J. Van Slyke, National Institute of Health, United States Public Health Service, Bethesda 14, Md. The other members of the Study Section are:

Dr. David P. Barr, Cornell University
Dr. R. D. Coghill, Abbott Laboratories
Dr. Vincent du Vigneaud, Cornell University
Dr. Harry Eagle, Johns Hopkins University
Dr. R. P. Herwick, Food and Drug Administration
Dr. Colin MacLeod, New York University
Dr. E. K. Marshall, Jr., Johns Hopkins University
Dr. J. E. Moore, Johns Hopkins University
Dr. Henry Welch, Food and Drug Administration
Dr. Oskar Wintersteiner, E. R. Squibb and Sons
Dr. W. Barry Wood, Jr., Washington University
Dr. Milton V. Veldee, National Institute of Health
Dr. Arthur M. Walker, Veterans Administration
Capt. George B. Dowling, U. S. Navy
Dr. William Leifer, U. S. Army

The primary interest of this Section at the moment is in fostering fundamental chemical and biologic studies of antibiotics, with particular immediate reference to commercial penicillin, its presently known species G, X, F, and K; new and modified penicillins; and impurities contained in penicillin.

The National Institute of Health is prepared to consider application for grants-in-aid from investigators interested in these fields. Applications should be made to Dr. Van Slyke, Secretary, Antibiotics Study Section, Research Grants Office, National Institute of Health.

KELLOGG GRANT TO WESTERN UNIVERSITY

A $57,950 grant from the W. K. Kellogg Foundation of Grand Rapids, Mich., to Western Reserve University, for the purpose of expanding the training program for public health nurses in service and conducting special research projects in nursing education and in pediatric nursing was announced recently by President Winfred G. Leutner of the University. The grant will enable the Frances Payne Bolton School of Nursing at the university to expand its teaching staff of full-time professors and part-time lecturers.

RESEARCH IN MENTAL HYGIENE

The Ohio State Board of Control has made available to the State Division of Mental Hygiene $25,000 for research in the field of mental diseases. The money will be divided among several research projects designed to investigate mental health problems from the biologic, medical, and sociological points of view. Edward J. Humphreys, M.D., Chief of the Bureau of Prevention and Education, Division of Mental Hygiene, will direct and coördinate the research work.

ALBERT SOILAND CREATES CANCER FOUNDATION

Dr. Albert Soiland, who founded the Los Angeles Tumor Institute, gave his entire life savings to establish the Albert Soiland Cancer Foundation. Assets will consist of nearly a million

dollars, including the California Medical Building, Los Angeles, and its $50,000 a year income. It is planned first to endow fellowships for promising young doctors in cancer research in recognized medical schools of the country, and later it is hoped that hospital beds can be provided for cancer patients. The announcement of the new foundation was released just prior to Dr. Soiland's sailing for Norway, where he died May 14.

NEW BUILDING FOR FELS RESEARCH INSTITUTE

The Samuel S. Fels Fund of Philadelphia announces the erection of a new research laboratory building on the Antioch College Campus at Yellow Springs, Ohio. The new building, to cost about $400,000 exclusive of equipment, is to house the activities of the Samuel S. Fels Research Institute, which was established by Mr. Fels in 1929 and originally financed by him. In 1936, its maintenance was taken over by the Samuel S. Fels Fund of Philadelphia. It was established that year to sponsor research, among other things, in various diseases, digestive functions, and behaviorism. To carry out the primary objective of the institute, that is a developmental study of man, his structure, function, and behavior in relation to heredity and environment, a multidisciplined approach has been used covering medicine, genetics, physiology, nutrition, biochemistry, physical anthropology, psychology, and anatomy. In addition to laboratories for each of the fields mentioned, the new building will contain offices, library space and an experimental nursery school. The Institute is under the direction of Dr. Lester W. Sontag of Yellow Springs.

COMMONWEALTH FUND GRANTS

The directors of the Commonwealth Fund have voted $381,817 to continue a rural hospital program begun in 1926. Most of this fund will be used to improve medical services and hospital facilities in the region surrounding Rochester, N. Y. Appropriations just made for medical research and medical education total $170,140. The largest of these is for a long-term study of growth and development by the Child Research Council at the University of Colorado. Beneficiaries in New York include the Memorial Hospital for the Treatment of Cancer and Allied Diseases, which received a grant for the continued study of certain biochemical problems associated with cancer.

SURVEY OF NURSING ORGANIZATIONS

Raymond Rich Associates have been appointed to direct a structural study of 6 national professional nursing organizations. Its sponsoring committee includes representatives of the American Nurses' Association, National League of Nursing Education, National Organization for Public Health Nursing, National Association of Colored Graduate Nurses, Association of Collegiate Schools of Nursing, and American Association of Industrial Nurses.

JOHN AND MARY MARKLE FOUNDATION

During 1945, grants totalling more than $48,600 were made by the John and Mary Markle Foundation. Chief recipients of the grants were 62 universities, medical schools, research institutes, and schools of public health. Studies of tropical diseases, virus diseases, biochemistry, nutrition, physiology, and other subjects in the field of medical and physical sciences were the principal projects supported.

John A. Ferrell, M.D., who was Medical Director of the Foundation until his retirement on July 1, 1946, and who administered the program for 1945, has been a member of the American Public Health Association since 1911 and is a Charter Fellow. He became a Life Member in 1932.

On July 1, 1946, John M. Russell commenced his duties as Executive Director for the Foundation. Mr. Russell is a former assistant to President James B. Conant of Harvard University and served for two years during the war on the staff of General Douglas MacArthur.

SOUTH CAROLINA PUBLIC HEALTH ASSOCIATION

The 23rd Annual Meeting of the South Carolina Public Health Association, held in May, was attended by about 500 persons. The following officers were elected:

President—Hilla Sheriff, M.D., Director, Division of Maternal and Child Health, State Board of Health

President-elect—Laura Blackburn, R.N., Consultant Nurse, Division of Maternal and Child Health

First Vice-President—L. A. Nimmons, M.D., Health Officer, Dillon, Marion, Marlboro and Lee Counties

Second Vice-President—Charles W. Herrell, Sanitary Engineer, Pee Dee District

Secretary-Treasurer — Mrs. Frank George (reëlected)

Representative on APHA Governing Council—Ben F. Wyman, M.D., State Health Officer

STUDENTS FROM THE LATIN AMERICAN REPUBLICS

The Institute of International Education (927–15th Street, N. W., Washington, D. C.) through its Clearing House on Student Exchange has published a comprehensive list of 4,013 students from the 20 Latin American Republics enrolled in the colleges and universities of the United States during the academic year 1945–1946. Mexico and Cuba each sent more than 500 students; six of the republics sent fewer than 100 students, the smallest number, 34, coming from Paraguay. The list shows in addition where each student is enrolled, the source of scholarship or fellowship aid, and the field of study. The vast majority for whom this item was reported studied some branch of physical science. More than 60 students were listed as studying in the field of public health, a dozen or more in sanitary engineering, and others in allied fields such as biochemistry, bacteriology, epidemiology, and biostatistics.

KANSAS PUBLIC HEALTH ASSOCIATION

The Annual Meeting of the Kansas Public Health Association, held June 6–7 in Wichita, had as its honor guest and one of the featured speakers "Kansas's famous pioneer health officer," S. J. Crumbine, M.D. Dr. Crumbine was for 19 years, until 1923, secretary and executive officer of the Kansas State Board of Health. Through his efforts the common drinking cup was abolished from public places by legislative act, the common roller towel was put into oblivion, and many progressive food and drug laws were initiated that served as a pattern for other states.

The Association elected the following officers:

President—Fred Mayes, M.D., Assistant State Health Officer and Director of Local Health Administration, Topeka

President-Elect—Charles A. Hunter, Ph.D., Director of Public Health Laboratories, Topeka

Vice-President—Edna Cheney, R.N., Consultant, Kansas Crippled Children's Commission, McCracken

Secretary—Evelyn Ford, Records Consultant, State Board of Health, Topeka

Treasurer—Margaret Metzer, R.N., Consultant Nurse, Metropolitan Life Insurance Company, Topeka

Executive Committee:

R. A. Raymond, Executive Secretary, Kansas Crippled Children's Commission, Wichita

Leon Baumen, M.D., Labette County Health Officer, Parsons

J. E. Wolfe, M.D., City Health Officer, Wichita

FLORIDA STATE LABORATORIES

Recently four senior staff members have been appointed in the Florida

State Laboratories. The new director is Albert V. Hardy, M.D., Dr.P.H., who goes to Florida from the National Institute of Health of the Public Health Service. Dr. Roland B. Mitchell, Ph.D., will be Principal Bacteriologist and Assistant Director. He was previously with the A.A.F. as Major, Sn.C., and earlier with the Texas State Laboratories. Dr. Marion Hood, Ph.D., previously Assistant Prof. of Parasitology, L.S.U. Medical School, will be in charge of the Parasitology Division. Dr. Herman Chinn, Ph.D., currently Chief of the Division of Pharmacology and Biochemistry, School of Aviation Medicine, will join the staff on August 1 as Principal Chemist. In addition to the central laboratory in Jacksonville, Florida has four branch laboratories.

AMERICAN LEGION GIVES $50,000 FOR HEART STUDY

The American Legion and its auxiliary gave $50,000 on May 11 to the American Heart Association to assist in its campaign against rheumatic fever and heart disease. Each group gave $25,000. Half of the fund will be used in obtaining reportable data on rheumatic diseases, in stimulating a case finding program among school children and on the community level, in initiating an immediate guidance program for prevention and care and in the vocational rehabilitation and training of victims. The other $25,000 will be used for research into the relationship of bacteria to the occurrence and recurrence of rheumatic fever.

FIRST INTER-AMERICAN SANITARY ENGINEERING CONFERENCE

Rio de Janeiro is to be the center of attraction and activities for the First Inter-American Regional Sanitary Engineering Conference to be held under the auspices of the Institute of Inter-American Affairs and the Pan American Sanitary Bureau June 10–14. The *Newsletter* of the Institute of Inter-American Affairs, Health and Sanitation Division, gave as part of the purpose for the Conference the following:

> In the present effort in the New World to make all the cities and towns in the United States and the other Americas beautiful, clean, and prosperous, to increase by irrigation the number of fertile fields, to control disease by draining swamps, to promote industry by providing water power—in all this the sanitary engineer is certainly taking a leading part. In the development of the western hemisphere into a healthful, prosperous world the coming regional conference will be an important milestone.

The list of those planning to attend the Conference looked very much like the Fellowship list of the A.P.H.A. Among those who planned to attend were Harold B. Gotaas, President of the Institute of Inter-American Affairs, Herman Baity, Victor M. Ehlers, H. A. Whittaker, Gordon M. Fair, R. E. Tarbett, Abel Wolman, and Edward D. Hopkins.

INTERNATIONAL LIAISON COMMITTEE FOR SOCIAL HYGIENE

In response to requests from various health and welfare agencies in the United States and in other countries, a Liaison Committee for International Social Hygiene Agencies and Activities has been set up for service during the period of transition from war to peacetime relationships among nations.

Headquarters of the committee are at Room 1401, 1790 Broadway, New York 19, N. Y. William F. Snow, M.D., is serving as chairman, and Jean B. Pinney, as secretary-treasurer, with Bascom Johnson as special consultant.

MILLION DOLLARS FOR SURGICAL RESEARCH

Theodore L. Chase, M.D., a retired Philadelphia surgeon, now living in Reno, Nev., has increased his contribution of $450,000 to Temple University

School of Medicine, Philadelphia, to $1,000,000. The gift is to establish and endow a surgical research foundation with special emphasis on cancer.

CONNECTICUT BOARD FOR INEBRIATES

In accordance with legislation enacted by the 1945 General Assembly, Governor Baldwin has appointed the following persons to serve as members of the Board of Trustees of the Connecticut State Fund for Inebriates:

Selden D. Bacon, Ph.D., *Chairman*, New Haven
Hon. Edna A. F. Edgerton, Stamford
Arthur H. Jackson, M.D., Waterbury
Thomas P. Murdock, M.D., Meriden
Att'y Abraham S. Ullman, New Haven

AMERICAN SOCIETY FOR CANCER RESEARCH

At a recent meeting of the Association in Atlantic City, the following were chosen officers:

President—William U. Gardner, Ph.D., New Haven, Conn.
Vice-President—John J. Bittner, Ph.D., Minneapolis, Minn.
Acting Secretary-Treasurer — Charles W. Hooker, Ph.D., New Haven, Conn.

HEALTH PROGRAM FOR OHIO

At its Centennial Anniversary Meeting in May, the Ohio Medical Association pledged its active support and leadership in "a forward-looking, affirmative health program for the state." Its plan starts with the declaration that "every citizen of Ohio is entitled to an opportunity to achieve and enjoy good health," and that "attainment of this goal is possible."

Along with the more general items of the program, such as an attack on malnutrition, bad housing, smoke nuisance, development of recreation facilities, and the standard functions of health departments, such as sanitation, venereal disease, and tuberculosis control, school health service, maternal and child health services, the program states that "Ohio's State Department of Health should be provided with sufficient funds for the employment of competent personnel and for the maintenance of adequate facilities. . . . The department is not receiving adequate appropriations from state funds."

As to rural health, the program declares, "Stronger and better financial local health departments better able to provide adequate services are needed in many rural areas."

The program favors medical care for the needy and encourages the extension of voluntary prepaid medical and hospital care plans. Its first item is for economic improvement in the state, in recognition of the relationship between living standards and general health.

CEREBRAL PALSY DIVISION CREATED

The National Society for Crippled Children and Adults, Inc., will create a special Cerebral Palsy Division to carry out its national program to assist persons afflicted with this condition. A director will be appointed for the division, which will project a six point plan aimed to insure the cerebral palsy health and medical care, social welfare and security, recreational, educational, and employment opportunities as well as foster and extend research in the care and prevention of the disease. The National Society for Crippled Children and Adults will establish a special fund to extend the program for the training of personnel and research.

HELP FOR WAR DEVASTATED LIBRARIES

The American Book Center for War Devastated Libraries has been organized for a pooling of resources and coördinated action in restocking devastated libraries with needed American publications. The Center requests the help of *Journal* readers in this work. Particularly needed are scientific and technological publications issued during the

past decade and scholarly books that are important contributions to their fields. Files of the *Journal*, especially for the war years, are in great demand.

The Book Center is sponsored by the Joint Committee on Books for Devastated Libraries made up of representatives of the American Library Association, Medical Library Association, and ten other national library groups. It cannot purchase books and periodicals but must depend on gifts—from individuals, institutions, and organizations.

How to Ship—All shipments should be sent PREPAID via the cheapest means of transportation to The American Book Center, c/o The Library of Congress, Washington 25, D. C. Although the Center hopes that donors will assume the costs of transportation of their materials to Washington, when this is not possible reimbursement will be made upon notification by card or letter of the amount due. *The Center cannot accept material which is sent collect.*

DEPARTMENT OF MEDICINE AND SURGERY, VETERANS ADMINISTRATION

The following appointments have been made in the Department of Medicine and Surgery of the Veterans Administration:

Thaddeus Marion Koppa, M.D., of Glen Ellyn, Ill.—as Assistant Chief, Tuberculosis Division, Branch Office 10, Dallas, Tex. He was formerly in private practice.

Edgar C. Harper, M.D., of Richmond, Va.—as Assistant Chief, Tuberculosis Division, Veterans Administration Branch Office 4, Richmond, Va. Dr. Harper has been Director of the Tuberculosis Field Service of the Virginia State Health Department and was an Instructor in Physical Diagnosis and Special Lecturer on Tuberculosis at the Medical College of Virginia.

Joseph N. Plumer, M.D., of Philadelphia, Pa.—as Chief, Medical Service, Veterans Administration Hospital, Tucson, Ariz. Dr. Plumer has just returned from active duty with the U. S. Army.

John K. Deegan, M.D., of Newport, R. I.—as Clinical Director, Veterans Tuberculosis Hospital at Castle Point, N. Y. He has been on active duty with the Army.

MODEL MEDICAL CENTERS IN CHINA

Plans have been made to establish model medical centers in China to rebuild the country's medical system. The program is sponsored by the Chinese Government with the coöperation of the American Bureau for Medical Aid to China. The first medical centers will be built in Shanghai and places to be designated in North and South China. Later units are planned for Western and Central China.

PERSONALS

Central States

WALTER L. BIERRING, M.D.,* Iowa State Health Commissioner, Secretary-Treasurer of the Federation of State Medical Boards and Editor of its bulletin, has been appointed Professor Emeritus of the Theory and Practice of Medicine, State University of Iowa College of Medicine, Iowa City, in tribute to his many services.

DOUGLAS BOYD, M.D., has been appointed President of the Highland Park Board of Health, Ill., succeeding DONALD E. ROSSITER, M.D., who resigned, effective April 1. Dr. Rossiter had held the position since 1931, except while on military leave.

GERALD S. DOOLIN has recently been appointed to the newly-created position of Sanitary Director of the National Confectioners' Association of the United States, Inc. He will organize an "educational program, dedicated to the maintenance of highest standards of purity of product and plant cleanliness for the industry." Mr. Doolin was recently discharged from the Army, where he

served for 3½ years in the Sanitary Corps, with the rank of Captain. Earlier he had had experience in food chemistry, bacteriology and plant sanitation with Swift & Company and Fowler Laboratories of Chicago.

GEORGE J. FORTUNE, recently released from military service, has been appointed Executive Director of the Cleveland Hearing and Speech Center, Western Reserve University School of Medicine. Mr. Fortune has been Director of Pupil Personnel Services in the Garfield Heights city schools. He will succeed LOWELL C. RUCH, who has been with Garfield Heights and the Hearing and Speech Center for the last 11 years and who will take a similar post in Los Angeles.

HAROLD R. HENNESSY, M.D.,† on duty with the Headquarters Staff, American Medical Association, as Assistant Secretary of the Council on Industrial Health, has recently been notified by the War Department that Her Majesty, Wilhelmina, Queen of the Netherlands, on the recommendations of the Ministers of War and Foreign Affairs, has approved and ordered his admission to Knighthood in the Order of Orange-Nassau, degree of Officer with Swords. During the war, Dr. Hennessy served as Lt. Colonel in the Medical Corps and spent 2 years in the European Theatre. He was connected with the military government public health program and for meritorious service in connection with military operations against the common enemy was awarded the Bronze Star Medal.

RUTH FREEMAN, R.N.,* Associate Professor of Preventive Medicine and Public Health at the University of Minnesota, has been appointed Administrator of the Red Cross Nursing Service. She will succeed VIRGINIA DUNBAR, now Dean of the Cornell University School of Nursing.

HOMER L. HIEBERT, M.D.,† of Topeka, Kan., Director of the Division of Tuberculosis Control, Kansas State Board of Health, since March 1942, resigned in March to take graduate work in radiology at Harper Hospital, Detroit.

EMILIE GLEASON SARGENT, R.N., M.S. P.H.,* Executive Director of the Visiting Nurse Association of Detroit, Mich., received the honorary degree of Doctor of Science in Nursing from Wayne University at the annual commencement on June 13.

Eastern States

CLAUDE P. BROWN, M.D.,* has been appointed Director of the Bureau of Laboratories of the Commonwealth of Pennsylvania, succeeding VERNER NISBET, M.D.,† who resigned on April 30. Dr. Brown has been Assistant Director since 1941.

ROYAL H. MCCUTCHEON, M.D., of Bethlehem, Pa., was elected President of the Pennsylvania Tuberculosis Society on April 26.

CHANGES IN HEALTH PERSONNEL IN NEW YORK STATE:

DAVID B. AST, D.D.S.,* has taken a 6 month leave of absence as Chief of the Dental Bureau of the State Department of Health. He left for Europe on June 20 to aid in the relief and rehabilitation program for displaced persons. Under the direction of the American Jewish Joint Distribution Committee, the program will cover both children and adults in France, Belgium, Holland, Germany, and Austria, and is designed to assure that dental disability will not prevent self-sufficiency.

SYLVIA ZAPPLER, D.D.S., and ROBERT O'NEIL, D.D.S., have been given

* Fellow, A.P.H.A.
† Member, A.P.H.A.

temporary appointments as Senior Dentists with the Dental Bureau of the State Department of Health. Dr. Zappler has been assigned to the health department trailer, which renders corrective dental service to preschool children in rural areas without private practising dentists. Dr. O'Neil has been assigned to the Bureau's Albany office where, with SIDNEY B. FINN, D.M.D.,† he will administer the State Dental Program during the absence of the Bureau's Chief, Dr. Ast.

DALE C. STAHLE, M.D., of Harrisburg, Pa., recently released from the armed services, has been named Acting Director of the Bureau of Tuberculosis Control, State Department of Health. Dr. Stahle was formerly in charge of the Department Division of Pneumonia Control.

HART E. VAN RIPER, M.D.,† of Scarsdale, N. Y., has been appointed Medical Director of the National Foundation for Infantile Paralysis. Dr. Van Riper joined the National Foundation's staff last October as Assistant to DON W. GUDAKUNST, M.D.* On the latter's death in January, Dr. Van Riper became Acting Head of the Medical Department.

UDO J. WILE, M.D., Professor of Preventive Medicine and Public Health, University of Michigan, Ann Arbor, has been awarded the decoration, Commander of the Order of Public Health, by the French Minister of Health, for his service while in France in instituting a venereal disease program. This decoration has previously been issued to two other persons, one of whom is Sir Alexander Fleming.

CHARLES F. WILINSKY, M.D.,* Executive Director of Beth Israel Hospital, Boston, and a member of the Executive Board of the American Public Health Association, has been appointed by Governor Tobin of Massachusetts as a member of the Public Health Council for a 6 year term succeeding CECIL K. DRINKER, M.D.

Southern States

BERNARD D. DAITZ, M.S.P.H.,* who has served with the Sanitary Corps for several years, most recently as Major, has become Executive Director of Medical Rehabilitation at the Veterans Administration Hospital, Oteen, N. C.

GEORGE B. DARLING, DR.P.H.,* Vice-Chairman of the Division of Medical Science, National Research Council, Washington, D. C., has been appointed Director of Medical Affairs, a newly created position at Yale University, effective July 1. Dr. Darling will correlate the University interests represented in the Schools of Nursing and Medicine, the Department of Public Health and the Grace-New Haven Community Hospital.

GEORGE A. DENISON, M.D.,* has been appointed Professor and Chairman of the Department of Public Health at the Medical College of Alabama in Birmingham. JOHN E. CHRIETZBERT, M.D., and GUY M. TATE, M.S., have been appointed Assistant Professors.

CLEMENT V. HIESTAND, M.D., of Campbellsville, Ky., recently completed 50 years in the practice of medicine, 25 of which were spent as Health Officer of Taylor County.

ALEXANDER G. LANGMUIR, Major, MC, AUS,* a member of the Commission on Acute Respiratory Diseases at Fort Bragg, N. C., under the Army Epidemiological Board, has been appointed Associate Professor in the Department of Epidemiology of the Johns Hopkins School of Hygiene and Public Health.

MARK M. LUCKENS, Capt., Sn.C.,† has

* Fellow, A.P.H.A.
† Member, A.P.H.A.

been appointed Chief of the Medical Inspection Branch at Fort Jackson, S. C. Capt. Luckens has been recently discharged from the Regional Hospital at Fort McClellan, Ala., where he has been a patient for about 6 months.

CHANGES IN HEALTH PERSONNEL IN VIRGINIA:

BENJAMIN R. ALLEN, M.D.,† formerly of Suffolk, Va., recently released from the Army, has been appointed Director of the Bureau of Communicable Diseases, Virginia Department of Health, Richmond, effective April 1.

EDGAR C. HARPER, M.D.,† Richmond, Director of Tuberculosis Outpatient Service and the Crippled Children's Bureau, resigned, effective May 1, to become Assistant Chief, Tuberculosis Control Program, Fourth District, Veterans Administration.

HARRY F. WILSON, M.D.,* has returned from service in the Army to resume his position as Director of the Division of Industrial Health, South Carolina State Board of Health. GEORGE H. ZERBST, M.D.,* of Columbia, S. C., who has acted as Director of the Division during Dr. Wilson's absence, has been seriously ill and is on leave at the present time.

Foreign

E. H. HINMAN, M.D., PH.D., M.P.H.,* who has served for the last four years with the Institute of Inter-American Affairs in El Salvador and in Mexico, has returned to the Tennessee Valley Authority Health and Safety Department as Chief of the Division of Malaria Control. He was awarded the Liceaga Medal by the Government of Mexico for his contribution to public health.

GEORGE C. BUNKER † has reopened an office in Panama, R. P., for consulting practice. During the past 9½ years, he has served as Consulting Engineer to the National Ministry of Public Works and the National Institute of Sanitary Works, Caracas, Venezuela, S. A., and specialized in the development and purification of water supplies in Venezuela.

* Fellow, A.P.H.A.
† Member, A.P.H.A.

CONFERENCES AND DATES

American Congress of Physical Medicine—24th Annual Session. Hotel Pennsylvania, New York, N. Y. September 4–7.

American Dietetic Association—28th Annual Meeting. Netherlands Plaza, Cincinnati, O. October 14–18.

American Hospital Association—48th Annual Convention and Post-war Conference. Philadelphia, Pa. Week of September 30.

American Medical Association—7th Annual Congress on Industrial Health. Copley-Plaza Hotel, Boston, Mass. September 30–October 3.

American Nurses Association, National Organization for Public Health Nursing, National League of Nursing Education—Biennial Nursing Convention. Atlantic City, N. J. September 23–26.

American Public Health Association—74th Annual Meeting. Headquarters—Public Auditorium, Cleveland, O. November 12–14.

Meetings of related organizations (November 11):

American School Health Association
American Social Hygiene Association
Association of Maternal and Child Health Directors
Association of Reserve Officers of the U. S. Public Health Service
Conference of Municipal Public Health Engineers
Conference of Professors of Preventive Medicine
Conference of State Sanitary Engineers
Conference of State and Provincial Public Health Laboratory Directors
Council of State Directors of Public Health Nursing
National Committee of Health Council Executives
Public Health Cancer Association

American Public Works Association—Public Works Congress. Fort Worth, Tex. September 22–25.

International Association of Milk Sanitarians, Inc.—Annual Meeting. Seaside Hotel, Atlantic City, N. J. October 24–26.

Iowa Public Health Association—Annual Meeting. Hotel Ft. Des Moines, Des Moines, Iowa. September 26–27.

Michigan State Medical Society—81st Annual Session. Book-Cadillac Hotel, Detroit, Mich. September 25–27.

National Association of Housing Officials. Cleveland, O. October 10–12.

National Committee for Mental Hygiene—Annual Meeting. Hotel Pennsylvania, New York, N. Y. October 30–31.

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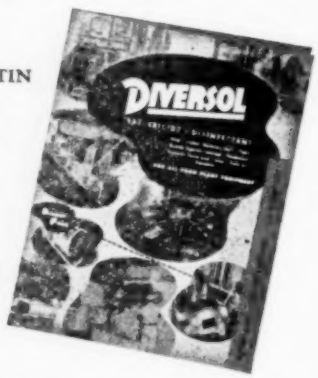

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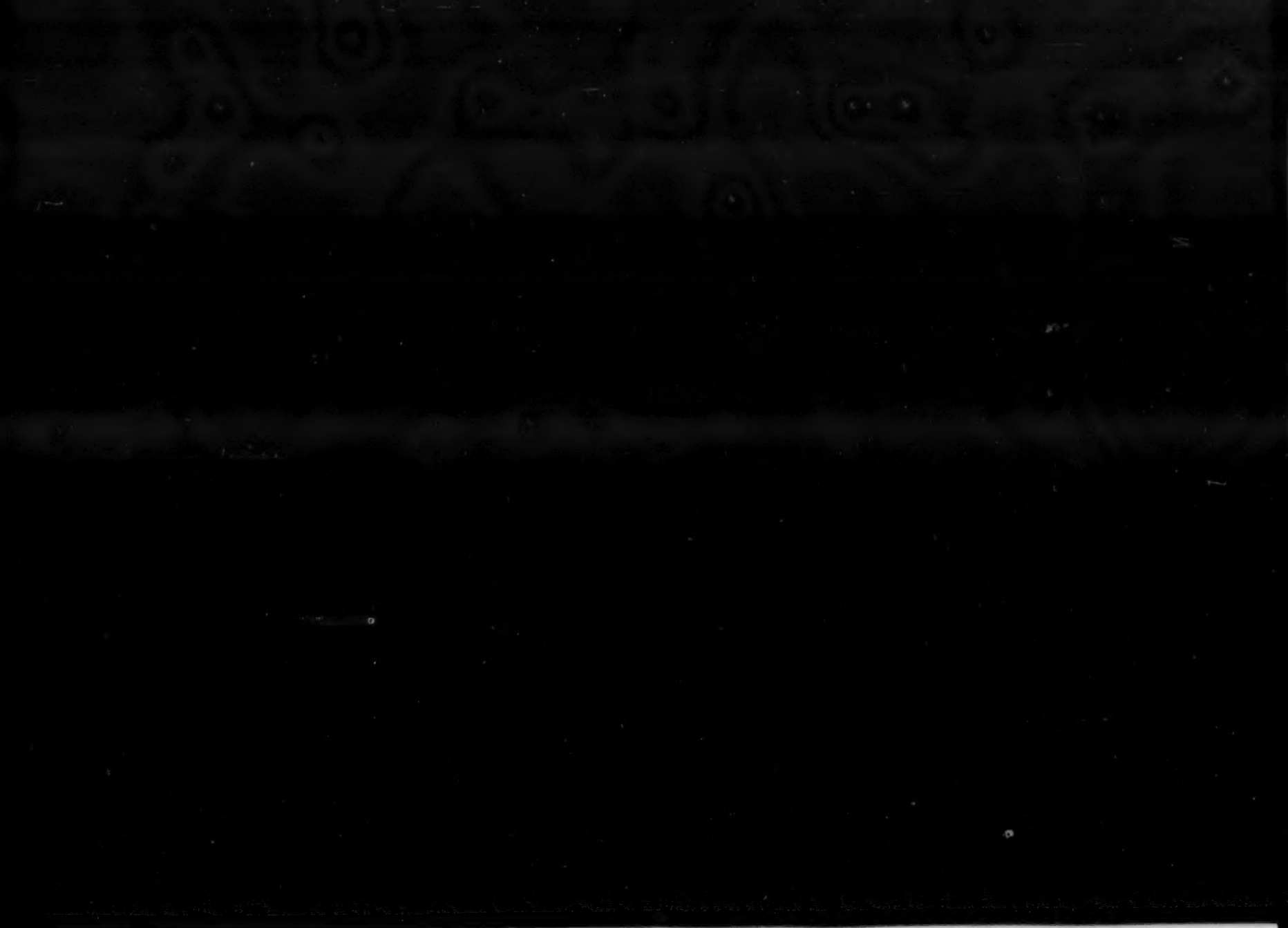
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